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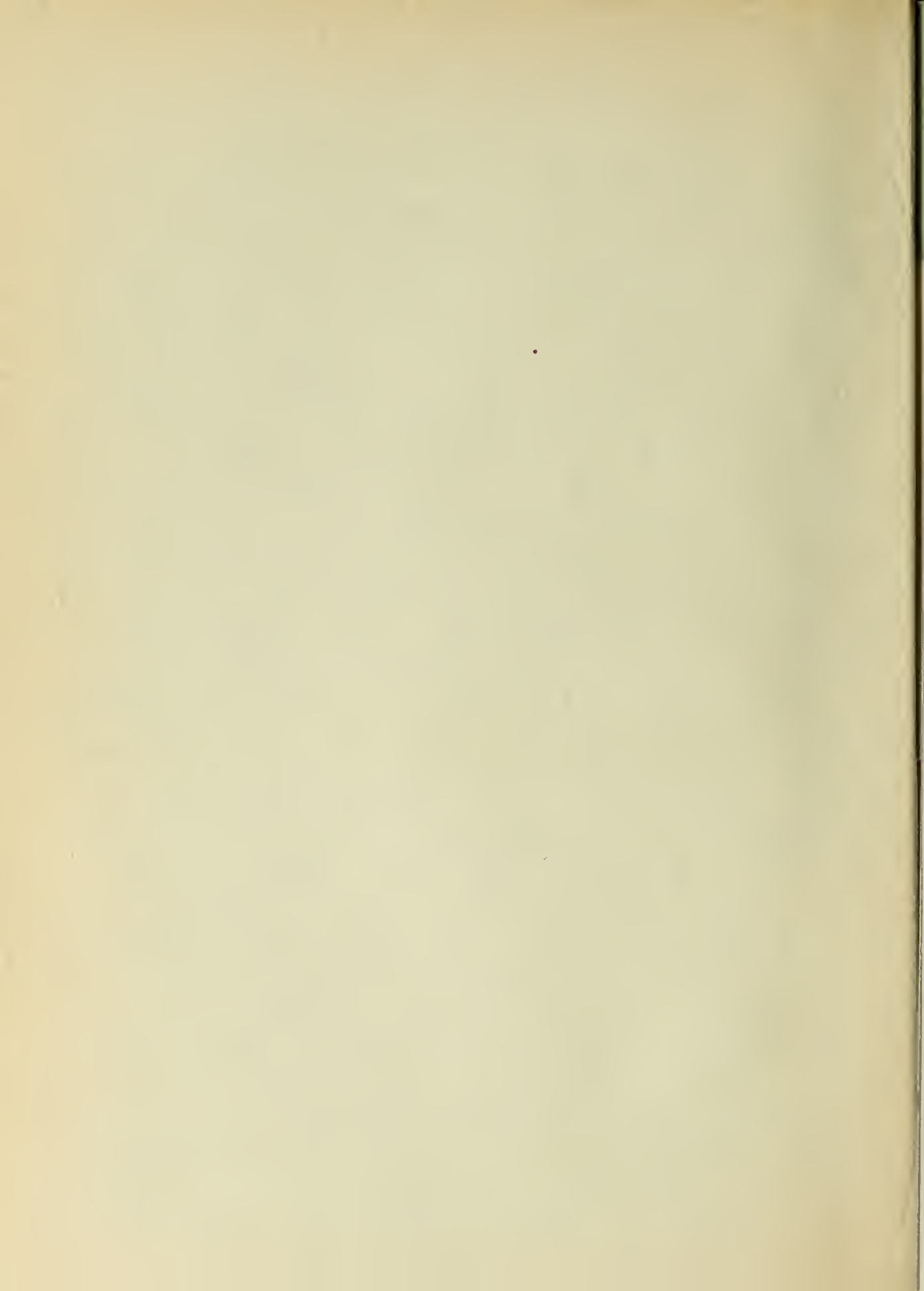
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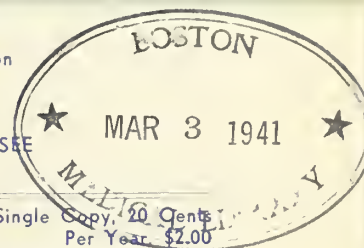






# THE JOURNAL of the TENNESSEE STATE MEDICAL ASSOCIATION

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H. H. SHOULDERS, M.D., Secretary and Editor  
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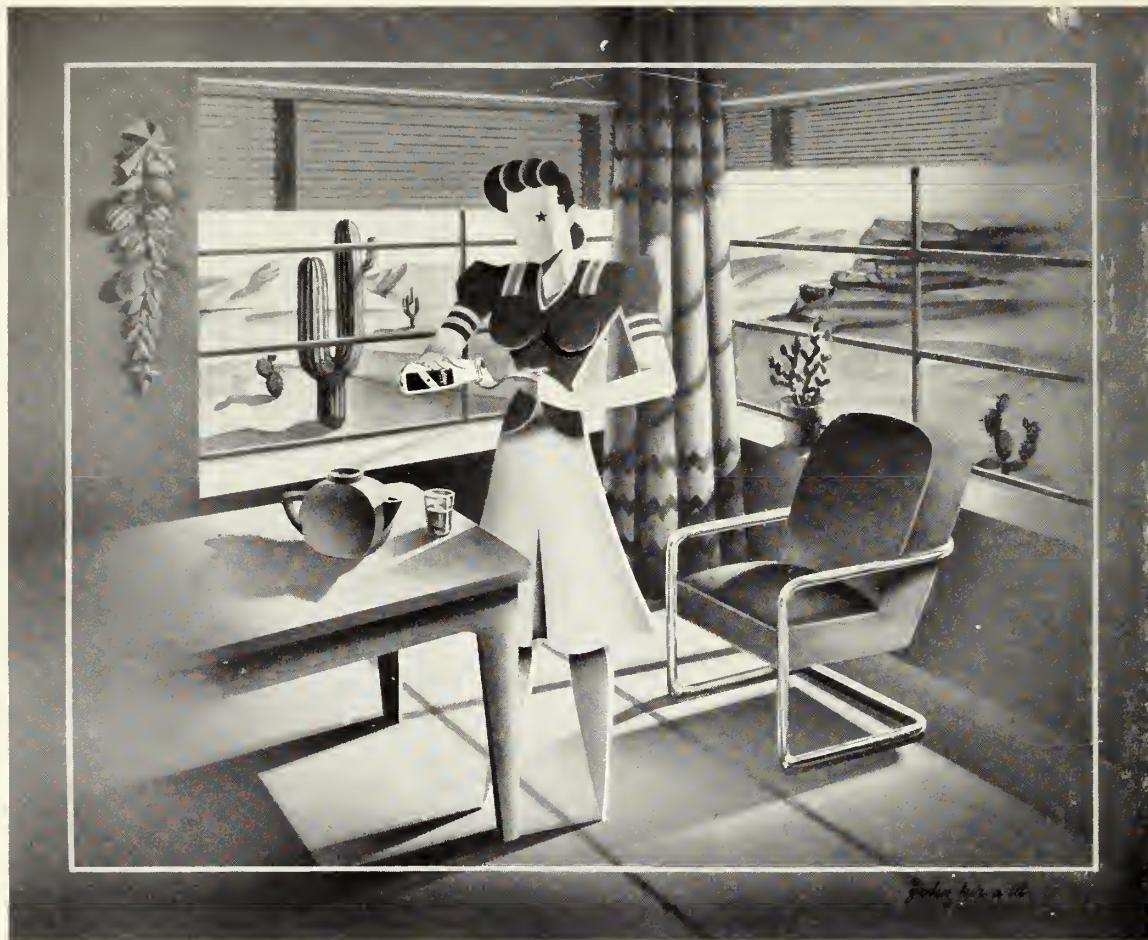
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# *The JOURNAL of the* **TENNESSEE** *STATE MEDICAL ASSOCIATION*

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## CONVULSIONS IN CHILDHOOD\*

M. G. PETERMAN, M.D., Milwaukee Children's Hospital, Milwaukee, Wisconsin

A convulsion is a major symptom which presents a challenge to your diagnostic and sometimes to your therapeutic ability. No symptom demands more immediate treatment nor subsequently a more thorough study. Most of this study may be completed in your own office. It must begin with a detailed and thorough history of the patient and of his relatives.

Careful inquiry must be made for cases of epilepsy, convulsions, and nervous diseases in the relatives. Inheritance is the predominant factor in idiopathic epilepsy, but the history may be difficult to elicit. Lennox states that patients with symptomatic convulsions have three times as many relatives with epilepsy as the general population, while patients with essential epilepsy have five times as many. Abnormalities during pregnancy must be noted. The period of gestation, duration of labor, and the type of delivery are highly significant factors in establishing the foundation for the development of the child's nervous system. The hazards of prematurity, prolonged labor, difficult delivery, cerebral trauma, and anoxemia cannot be overemphasized. It is amazingly difficult to obtain detailed information concerning the most important event in the child's life, his entrance into the world. The significance of

short periods of cerebral anoxemia and cerebral edema are not generally appreciated. The subsequent physical and mental development of the child provides an index of his inherited and acquired potentialities or defects. It is extremely important to note the age of appearance of the various stages in development; *i.e.*, ability to hold head up, to sit up, stand, walk, and to talk. A child who is delayed in the appearance of several or of all of these functions has obviously inherited or acquired an undeveloped or an injured nervous system which provides a basis for chronic convulsions.

The child's reactions to acute infections and to the acute infectious diseases and their complications provides further information concerning the presence or absence of a basic tendency to convulsions. Certain children inherit an incomplete development of the brain or of the cerebral basal ganglion cells, others acquire injuries to these cells and thus these individuals have a lower threshold for the convulsive state. Any increased load, such as high fever or invasion of the blood stream by bacteria, may precipitate a convulsion. A direct invasion of the ganglion cells or of the cortex, as in encephalitis or meningitis, will, of course, initiate another mechanism to produce a convulsive seizure.

A detailed history of various traumas, particularly cerebral, and the reactions of

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\*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

the child may be of great value. While every child has many falls and injuries, some one of these may be responsible for cerebral edema hemorrhage, or a tear in the dura, and the resulting pathology may be the basic cause of subsequent if not immediate convulsions.

A detailed description of a convulsion is of further value in diagnosis. The typical grand mal of epilepsy is well known, as is the tonic spasm of tetanus with the marked involvement of the masseters. The carpopedal spasm in the convulsions of tetany or spasmophilia are familiar to the pediatricist. The convulsions of cerebral birth injury are usually characterized by a generalized spasticity. The various distinctive features of each type of convulsion are best demonstrated in the moving pictures which follow.

All convulsions might be classified as illustrated in Table 1 into those with an organic basis and those without. In Table 2 I have outlined briefly the types of convulsions. In 1932, I introduced the first complete classification of convulsions in childhood. This classification was revised in 1934 and again in 1939, when I presented a review of 1,000 cases. The last classification is presented in Tables 3 to 8.

You will note that eighty-two per cent of all convulsions in childhood are due to acute infections, idiopathic epilepsy, cerebral birth injury, or tetany. Sixty-six per cent of all convulsions of childhood occur within the first three years of life. These facts are well worth keeping in mind. Also bear in mind that the cutting of teeth, worms, and gastroenteritis are not causes of convulsions.

The treatment of convulsions may be considered in two phases. First, the immediate or emergency treatment, and second, the subsequent or preventive treatment. Only the immediate treatment will be considered here. The first consideration is to protect the child against injury. If there is a fever the next step is a cool pack or sponge or enema to lower the body temperature. Any manifest infection, such as an abscess in the ear or a throat infection, must be treated locally. A hot bath, the

standard lay treatment of a convulsion, has no particular value and may be a dangerous procedure. In the excitement of treating a convulsion the bath water is often too hot for safety and severe burns have resulted. An enema is always in order unless the child has just had a stool. The solution should be first a normal saline cleansing enema followed by a fifty per cent magnesium sulphate solution to be retained as long as possible.

If the convulsion is a major one and does not appear to be subsiding, or if it has been active for some time, the most effective, practical, and the simplest procedure will be anesthesia with chloroform or with vinyl ether. The latter preparation acts more quickly and the patient comes out as soon as the vinyl ether is discontinued. The anesthesia is not as deep and the drug appears to have few harmful side effects. However, the possible harmful effects of chloroform cannot be considered in the treatment of the much more potentially harmful convulsion. Every general practitioner should carry a small vial of vinyl ether or of chloroform in his bag to treat convulsions. Status convulsus will be fatal unless it is treated promptly. If neither of these two anesthetic agents is available, the patient should be given magnesium sulphate in saturated solution by mouth or by enema. If a sterile solution is available, a twenty per cent to fifty per cent solution may be given intramuscularly. A twenty per cent solution of magnesium sulphate may be given slowly by vein if the patient can be sufficiently restrained.

Soluble phenobarbital may be given subcutaneously in the treatment of the milder convulsions, but its effect is variable and slow.

If a diagnosis of tetanus has been made, tetanus antitoxin must be administered promptly and then tribromethanol is given by rectum.

In spasmophilia or tetany the convulsions are treated with some preparation of calcium. Calcium chloride in ten per cent aqueous solution may be given by mouth—forty-five to sixty grains by gavage if necessary. This initial dose should be followed



with fifteen grains every six hours for two weeks or longer. Calcium gluconate in sterile ten per cent solution may be given intravenously or intramuscularly for the first few doses in five to ten cubic centimeter amounts. Viosterol and acid milk are given coincidentally and then continued for long periods.

Whenever possible blood count should be taken before treatment and sugar, calcium, and phosphorus determinations should be made. I have never seen a convulsion or repeated true convulsions which were due to a low blood sugar. I have seen seven patients in whom the convulsive state had been attributed to hypoglycemia. In no case could I verify the diagnosis. I have seen children with attacks of weakness, dizziness, or fainting associated with low blood sugars and which were relieved by the administration of sugar, but in no true convulsive state was this finding confirmed.

There is a difference of opinion concerning the value of a spinal puncture in the convulsive state. I have found too many cases of unsuspected encephalitis, meningitis, and cerebrospinal syphilis on examination of the spinal fluid to dispense with this useful and harmless procedure. Certainly no neurologic case is completely studied without a spinal fluid examination. There are certain cases of mild or of sterile meningitis which are completely relieved with one drainage of spinal fluid. Unless a brain tumor is suspected, there is no contraindication to spinal puncture.

Intracranial hemorrhage in the newborn infant cannot be positively diagnosed without finding blood in the spinal fluid. If the blood is in communication with the subarachnoid space, the infant is better off to have the bloody fluid drained off than if it is allowed to clot or to be absorbed. In subdural hematoma the diagnosis may be substantiated and the convulsions temporarily relieved by aspiration of the blood from the subdural space.

When convulsions are due to intracranial injury, such as skull fracture or contusion, the treatment depends on many factors and generalizations cannot be made.

Finally, may I ask you to consider every

convulsion a cause of brain injury. After the convulsion is under control keep the patient absolutely quiet in bed for several days as you would any brain injury. A convulsion is not a necessary evil which the child will outgrow. It is a symptom which demands your respect and consideration.

TABLE 1  
CAUSES OF CONVULSIONS  
*Organic*

1. Congenital or developmental cerebral anomalies. (Dysgenesis, hydrocephalus, porencephaly.)
2. Antenatal, natal, or postnatal cerebral injuries. (Hemorrhage, traumatic softening, anoxia, edema.)
3. Antenatal, natal, or postnatal infections. (Encephalitis, meningitis, syphilis.)
4. Idiopathic epilepsy.

*Nonorganic*

1. The acute infections.
2. Chemical injuries or acute poisonings. (Tetany, lead, etc.)

TABLE 2  
TYPES OF CONVULSIONS  
*Major*

*Tonic*—clonic with unconsciousness; brain tumor; brain injury; encephalitis; meningitis; tetany.

*Grand mal*—epilepsy; characteristic; sequence.

*Tonic*—persistent with consciousness; tetanus.

*Jacksonian*

Cerebral injury.

*Minor*

Petit mal.

TABLE 3  
CONVULSIONS  
*One Thousand Cases—Total Series*

	<i>Per Cent</i>
Acute infection .....	34.0
Idiopathic epilepsy .....	23.6
Cerebral birth injury or residue.....	15.5
Miscellaneous causes .....	12.7
Spasmophilia or tetany.....	8.9
Cause not established.....	5.3

TABLE 4  
CONVULSIONS  
*Newborn to One Month (7.9 Per Cent of Total)*

	<i>Cases</i>
Cerebral birth injury (hemorrhage, edema, or anoxemia) .....	54
Acute infection .....	8
Idiopathic epilepsy (proven later) .....	3
Infantile tetany .....	3
Hydrocephalus .....	2
Cerebral agenesis .....	1
Congenital heart disease.....	1
Congenital syphilis .....	1
Meningitis (secondary) .....	1
Cause not established.....	5

TABLE 5

*One to Six Months (13.8 Per Cent of Total)*

	Cases
Acute infection .....	57
Cerebral birth injury .....	25
Spasmophilia or tetany .....	19
Cerebral agenesis .....	7
Idiopathic epilepsy .....	5
Hydrocephalus .....	3
Pertussis (cerebral hemorrhage) .....	2
Brain trauma .....	1
Cerebral thrombosis .....	1
Congenital heart disease .....	1
Cause not established .....	17

TABLE 6  
CONVULSIONS*Six to Thirty-Six Months (44.2 Per Cent of Total)*

	Cases
Acute infection .....	194
Idiopathic epilepsy .....	66
Spasmophilia or tetany .....	57
Cerebral birth injury or residue .....	49
Meningitis (influenza 6, meningococcus 3, streptococcus 2, pneumococcus 1, staphylococcus 1, tuberculous 1) .....	14
Encephalitis, all types, acute and chronic .....	13
Pertussis, intracranial hemorrhage .....	7
Cerebral agenesis .....	6
Acute anterior poliomyelitis .....	3
Polioencephalitis (Strümpell?) .....	2
Brain injury, traumatic .....	4
Hydrocephalus .....	4
Gastroenteritis (intracranial sinus thrombosis?) .....	1
Congenital heart disease .....	1
Congenital syphilis .....	1
Anoxemia (anesthetic) .....	1
Transfusion reaction .....	1
Intracranial vascular lesion .....	1
Cause not established .....	17

TABLE 7  
CONVULSIONS*Three to Ten Years (25.1 Per Cent of Total)*

	Cases
Idiopathic epilepsy .....	110
Acute infection .....	61
Cerebral birth injury residue .....	22
Encephalitis, all types, acute and chronic .....	12
Brain injury, traumatic .....	11

Meningitis (streptococcus 3, influenza 2, tuberculous 1) .....	6
Brain tumor .....	5
Tetanus .....	4
Cerebral agenesis .....	2
Uremia .....	2
Insulin reaction .....	2
Hydrocephalus .....	1
Congenital syphilis .....	1
Congenital heart disease .....	1
Gastroenteritis (intracranial sinus thrombosis?) .....	1
Cerebral edema (nephrosis) .....	1
Pertussis .....	1
Malaria .....	1
Cause not established .....	7

TABLE 8  
CONVULSIONS*Ten to Sixteen Years (5.6 Per Cent of Total)*

	Cases
Idiopathic epilepsy .....	37
Encephalitis, all types, acute and chronic .....	6
Cerebral birth injury residue .....	3
Cerebral agenesis .....	2
Congenital syphilis .....	2
Tetanus .....	2
Meningitis, meningococcus .....	1
Hysteria? .....	1
Hemangioma of face and brain (Lindau's syndrome) .....	1
Cerebral hemorrhage (Scurvy) .....	1

TABLE 9

## IMMEDIATE TREATMENT OF CONVULSIONS

1. Protect against injury—no opiates.
2. Chloroform or vinyl ether anesthesia.
3. Reduce fever.
4. Magnesium sulphate, repeat every six hours. Sixty to 180 cubic centimeters of fifty per cent to twenty-five per cent solution by mouth or rectum, or five to twenty cubic centimeters of twenty-five per cent sterile solution intramuscularly, or five to ten cubic centimeters of twenty per cent to ten per cent sterile solution intravenously *slowly*.
5. Calcium gluconate by mouth or intramuscularly.
6. Calcium chloride by mouth for tetany.
7. Tribromethanol for tetanus.
8. Phenobarbital sodium, subcutaneously.
9. Chloral by rectum.
10. Absolute rest and quiet for days after.

## THE BASIC SCIENCE BILL

AN ACT to provide more effective requirements with respect to preliminary examinations for the practice of any of the medical or healing arts; and to repeal Sections 6908-6917, inclusive, of the Code of Tennessee, 1932, all of which relate to such preliminary examinations for the practice of the medical or healing arts.

SECTION 1. *Basic Science Certificate Required.*—Be It Enacted by the General Assembly of the State of Tennessee, That no person shall be eligible for examination or permitted to take an examination for a license to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the licensing board or officer empowered to issue such a license, a certificate of ability in anatomy, physiology, chemistry, bacteriology, and pathology (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the Basic Sciences.

SEC. 2. *The Healing Art Defined.*—Be It Further Enacted, That for the purpose of this Act, any license authorizing the licensee to offer or undertake to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition, is a license to practice the healing art.

SEC. 3. *Board of Examiners in the Basic Sciences.*—Be It Further Enacted, That the Board of Examiners in the Basic Sciences shall consist of five (5) persons to be appointed by the governor. Every member shall serve until his successor is appointed and qualified. The members of the Board shall be selected because of their knowledge of the basic sciences aforesaid. No member of the Board shall be actively engaged in the practice of the healing art or any branch thereof. The members shall be appointed one for one (1) year, one for two (2) years, one for three (3) years, one for four (4) years, and one for five (5) years from the date of their respective appointments. Upon the expiration of the term of any member, the governor shall fill the vacancy by appointment for a term of five (5) years. Upon the death, resignation, or removal of

any member, the governor shall fill the vacancy by appointment for the unexpired term.

SEC. 4. *Organization of Board, Election of Officers, Rules, Compensation.*—Be It Further Enacted, That the Board shall meet and organize as soon as practicable after appointment. It shall have power to adopt an official seal, to elect officers, and to make such rules as it deems expedient to carry this Act into effect. The Board shall keep a record of its proceedings which shall be prima facie evidence of all matters contained therein. Each member of the Board shall receive Ten Dollars (\$10.00) per diem and actual expenses, when actively engaged in the discharge of his duties. The compensation of the members and the other expenses of the Board shall be paid out of the fees received from applicants. The secretary-treasurer of the Board shall give such bond, running in favor of the State, as the state treasurer shall determine.

SEC. 5. *Fees Payable by Applicants.*—Be It Further Enacted, That the fee for examination by the Board shall be Ten Dollars (\$10.00). The fee for re-examination within any twelve months' period as hereinafter provided shall be Five Dollars (\$5.00), but the fee for re-examination after the expiration of twelve months shall be the same as the original fee. The fee for the issuance of a certificate by authority of reciprocity, on the basis of qualifications as determined by the proper agency of some other state shall be Five Dollars (\$5.00). All fees shall be paid to the Board by the applicant at the time of filing application. The Board shall pay all money received as fees into the state treasury, to be placed in a special fund to the credit of the Board. The state treasurer shall pay out of such fund all amounts for compensation and expenses of the Board on vouchers signed by the secretary-treasurer of the Board, with the official seal of the Board annexed. All expenditures of said Board shall be in accordance with the general budgetary law.

SEC. 6. *Examinations.*—Be It Further Enacted, That the Board shall conduct ex-



aminations at such times and places as it deems best, having due regard to the times and places of the examinations held by the several professional examining boards authorized to issue licenses to practice the healing art in the State of Tennessee. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing. No applicant shall be permitted or required to disclose in his application for examination, examination paper, or otherwise, the identity of the school or schools where he acquired his preliminary education, nor shall any such applicant be permitted or required to disclose in his application for examination, examination paper, or otherwise, the branch of the healing art which he proposes to practice. If the applicant receives a grade of seventy-five (75) per cent or more in each of the basic sciences, he shall be considered as having passed the examination. If the applicant receives less than seventy-five (75) per cent in one subject and receives seventy-five (75) per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination ensuing, upon application and the payment of the prescribed fee; but he shall be required to be re-examined in all branches. If the applicant shall receive less than seventy-five (75) per cent in more than one subject, he shall not be re-examined within the period of one year next following his original examination, nor unless he presents proof satisfactory to the Board of additional study in the basic sciences sufficient to justify re-examination.

SEC. 7. *Requirements for Certificate.*—Be It Further Enacted, That no certificate shall be issued by the State Board of Examiners in the Basic Sciences unless the person applying for a certificate submits evidence satisfactory to the Board that (1) he is a citizen of the United States of America, not less than twenty-one (21) years of age; (2) he is a person of good moral character; (3) he was graduated by an accredited high school, or school of similar grade or possessed of educational qualifications equivalent

to those required for graduation by such accredited high school before he began the study of the healing art; and (4) he has a comprehensive knowledge of the basic sciences as shown by passing the examination given by the Board as by this Act required.

SEC. 8. *Reciprocity.*—Be It Further Enacted, That the State Board of Examiners in the Basic Sciences may in its discretion waive the examination in the basic sciences required by this Act when proof, satisfactory to the Board, is submitted showing that the applicant is a citizen of the United States of America and has passed an examination in the basic sciences before a board of examiners in the basic sciences or a board authorized to issue licenses to practice the healing art, in another state, when requirements of that state are, in the opinion of the Board, not less than those provided by this Act.

The provisions of this section shall apply only to examinations conducted by the boards or officers of states that grant like exemption from examination in the basic sciences to persons granted certificates by the Board created by this Act.

SEC. 9. *Court Review of Action of Board.*—Be It Further Enacted, That any applicant who has been denied examination by the Board shall be entitled to have court review of such action of the Board in the manner provided by Code Sections 9008-9018.

SEC. 10. *Certificates and Licenses Void.*—Be It Further Enacted, That any basic science certificate and any license to practice the healing art or any branch thereof, which is issued contrary to this Act shall be void. A board which has issued a license by virtue of a void basic science certificate shall revoke or cancel such license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the Act under which such license was issued for the cancellation or revocation of licenses generally. The certificate issued to any person by the State Board of Examiners in the Basic Sciences shall be automatically revoked by the revocation of any license issued to such per-

son to practice the healing art or any branch thereof.

SEC. 11. *Practicing Without Basic Science Certificate Forbidden.*—Be It Further Enacted, That any person who shall practice the healing art or any branch thereof without having obtained a valid certificate from the State Board of Examiners in the Basic Sciences, except as otherwise authorized by this Act, shall be guilty of a misdemeanor and shall be fined not more than One Hundred Dollars (\$100.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 12. *Fraudulent Certificates Forbidden.*—Be It Further Enacted, That any person who shall obtain or attempt to obtain a basic science certificate by any dishonest or fraudulent means, or who shall forge, counterfeit, or fraudulently alter any such certificate shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 13. *Fraudulent Licenses Forbidden.*—Be It Further Enacted, That any person who shall obtain or attempt to obtain a license to practice the healing art or any branch thereof from any board authorized to issue any such license, without presenting to said licensing board a valid certificate issued by the State Board of Examiners in the Basic Sciences, as in this Act required, shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00) or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 14. *Issuance of Fraudulent Licenses Forbidden.*—Be It Further Enacted, That any person who knowingly issues or participates in the issuance of a license to practice the healing art or any branch thereof, to any person who has not presented to the licensing board a valid certificate from the State Board of Examiners in the Basic Sciences, or to any person who has presented to such licensing board any such certificate

obtained by dishonesty or fraud, or any forged or counterfeit certificate, shall be guilty of a misdemeanor and shall be fined not more than Five Hundred Dollars (\$500.00), or imprisoned in the county jail not more than eleven months and twenty-nine days, or both, in the discretion of the judge trying the case.

SEC. 15. *Fees Paid Unauthorized Practitioners Recoverable.*—Be It Further Enacted, That any money paid out by any person as compensation for services rendered in the practice of the healing art or any branch thereof to any person not validly licensed to practice such healing art, or branch, may be recovered by the person who has paid such money by a suit instituted within two years from the date when such fee or compensation was paid.

SEC. 16. *Enforcement.*—Be It Further Enacted, That the State Board of Examiners in the Basic Sciences and the various boards authorized to issue licenses to practice the healing art or any branch thereof shall investigate any supposed violation of this Act and report to the proper district attorney general all the cases that in the judgment of such board warrant prosecution. Every sheriff and peace officer shall investigate all supposed violations of this Act and apprehend and arrest all violators thereof. It shall be the duty of the attorney general of the several districts to prosecute violations of this Act.

SEC. 17. *List of Registrants to Be Filed with Secretary of State.*—Be It Further Enacted, That on or before the first day of March in each year, the secretary-treasurer of the State Board of Examiners in the Basic Sciences shall certify to the Secretary of State, under the hand of the secretary-treasurer of the Board, with the official seal of the Board annexed, a list of all persons registered with said Board for the current year, and such list shall at all times be available to the secretaries of the several examining boards, authorized to issue licenses to practice the healing art or any branch thereof in this State, and a certified copy of said list shall likewise be admissible in evidence in any court proceedings where such list may be material.

SEC. 18. *Exceptions.*—Be It Further Enacted, That this Act shall not be construed as applying to dentists, nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, or Christian Scientists, practicing within the limits of their respective callings; nor to other persons licensed to practice the healing art or any branch thereof in this State when this Act takes effect; nor to persons specifically permitted by any law pertaining to the practice of any of the healing arts to practice without licenses, practicing within the limits of the privileges thus granted them; nor to the sale, manufacture, or advertising of drugs, medicines, household remedies, chemicals, and household preparations, provided that the vendor, maker or advertiser refrains from any attempt to diagnose.

SEC. 19. *Saving Clause.*—Be It Further Enacted, That no provision of this Act shall be construed as repealing any law in force at the time of its passage with reference to the requirements governing the issuance of licenses to practice the healing art or any

branch thereof; but any board authorized to issue licenses to practice the healing art or any branch thereof shall accept certificates issued by the Board of Examiners in the Basic Sciences in lieu of examining applicants in such sciences. The unconstitutionality of any part of this Act shall not be construed as invalidating any other part thereof.

SEC. 20.—*Short Title.*—Be It Further Enacted, That this Act may be cited as "Basic Science Act, 1941."

SEC. 21. *Code Sections Repealed.*—Be It Further Enacted, That Sections 6908-6917, inclusive, of the Code of Tennessee, 1932, all of which relate to preliminary examinations for the practice of the medical or healing arts, and all other laws or parts of laws in conflict with the provisions of this Act be and the same are hereby repealed.

SEC. 22. *Public Welfare Clause.*—Be It Further Enacted, That this Act take effect from and after its passage, the public welfare requiring it.



## PRELIMINARY REPORT OF THE EFFECT OF COMBINED FEVER AND DEEP X-RAY THERAPY IN THE TREATMENT OF FAR-ADVANCED MALIGNANT CASES\*

H. S. Shoulders, M.D.; E. L. Turner, M.D.; L. D. Scott, M.D.; and W. P. Quinn, M.D.

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The idea of combining fever and deep X-ray therapy in the treatment of far-advanced malignant conditions is not entirely new; but because of some rather encouraging results in a few hopeless cases, we feel that a preliminary report is in order at this time.

Warren presented a paper before the American Congress of Radiology in 1933, in which he stated that some evidence existed that there was an intensification of the destructive effect on malignant cells by a combination of fever and X-ray therapy.

Delario (1935) comprehensively reviewed the literature on various methods of enhancing roentgen ray action and contributed some interesting results on the Flexner-Jobling rat carcinoma when treated simultaneously with radiotherapy and X-ray therapy. He states that "although the mortality is greater, the number of tumors that disappeared with radiotherapy and roentgen ray given together is greater than with any other treatment we have used, amounting to 46.1 per cent of the animals."

Doub (1935) reported a case of osteogenic sarcoma of the clavicle treated with radiation and fever therapy. He based his therapy on the facts that the administration of Coley's toxins, which consists of mixed toxins of erysipelas and bacillus prodigiosus, was usually followed by definite elevation of the patient's temperature. He felt that the fever was the effective agent in any beneficial results obtained from the use of the toxins, hence he reasoned that hyperthermia could be more accurately produced and controlled by mechanical means rather than by the introduction of toxins into the body. His therapy consisted of four series of deep X-ray therapy at intervals of two months, and the administration of fever therapy at weekly intervals for eight weeks.

He felt that the fever therapy might make the malignant cells more radiosensitive. About one year after treatment, the patient was living, clinically and roentgenologically cured and working.

Overgaard (1936) demonstrated on white mice that it was possible to exert a healing influence on implanted tumors with short and ultrashort waves. He interpreted this as being a simple heat influence. No X-ray therapy was administered.

Fuchs (1936) treated two cases of bronchogenic carcinoma with two to three hours of diathermy in an attempt to sensitize the tumor cells. His conclusions were that the combined treatments caused no increase in the malignancy and the tissues subjected to the combination therapy showed no signs of additional damage.

Berkman and Dessauer (1937) reported some improvement in hopeless cases through a combination of diathermy and X-ray therapy. The heat was expected to hasten mitosis and hence render the malignant cells more radiosensitive.

Korb (1939) gave local short-wave hyperthermia before, during, and after X-ray therapy. He gave no conclusions, but stated that local hyperthermia on a limited area was difficult.

By far the majority of malignant cases seen in the tumor clinic of George W. Hubbard Hospital are far advanced and hopeless as to cure. Only negro patients are included in this report, as this institution is devoted exclusively to the care of negro patients. In an effort to do something for this almost hopeless group of patients, the senior author suggested combining fever and deep X-ray therapy. His reasoning was similar to that of Doub, but different as to execution of the therapy. An outline as to the procedure in use at present is given below.

1. The patient is subjected to complete physical examination by the Department

\*We wish to thank Dr. Bernard Weinstein and the Departments of Medicine, Surgery, Gynecology, and Pathology for their valuable assistance.

of Medicine to determine if he is able to stand the fever therapy.

2. Preliminary administration of sodium chloride to guard against chloride loss.

3. Fever therapy with gradual increase to 105 degrees or 106 degrees Fahrenheit (rectal).

4. Patient wrapped in blankets and taken to deep therapy room (a distance of approximately sixty to seventy feet on the same floor).

5. Immediate deep X-ray therapy—750 r to one or two areas, according to size of lesion, site, etc. The factors used are 200 KVP, five-tenths copper and one aluminum, fifty centimeters distance; HVL, nine-tenths millimeter copper, five milliamperes, eighteen r m flux. In some instances one millimeter copper filtration has been used, and the dosage has been increased or decreased.

6. Hospitalization of patient until temperature returns to normal.

7. Discharge with follow-up weekly at intervals.

*Some cases have been subjected to two or three courses of fever therapy, each of which is immediately followed by 200 KV X-ray therapy.*

*We feel that the administration of the X-ray therapy while the patient's temperature is elevated causes an intensification of the destructive effect of the X-ray therapy on the malignant cells that we could not obtain if we allowed a day to elapse between these modalities.*

#### CASE REPORTS

No. 1.—W. C., male patient, age sixty-six years, admitted to hospital on January 24, 1938, complaining of mass under the right nipple of eighteen months' duration. Patient states that mass has never been painful or tender. He was referred to the hospital by local physician for removal of the mass. Previous operation for rectal abscess in 1920. Positive history of gonococci and luetic infection. Had treatment for both conditions.

P. E. (local). There was a nontender mass in the right breast, four by one centimeters, freely movable, not attached to underlying tissue or skin. Palpation of right

axilla revealed two lymph nodes, each measuring 1.5 by one centimeter in size. Left breast and axilla negative. Blood count normal. Urine had small amount of albumin. Systolic murmur present. Clinical diagnosis of fibroadenoma of right breast, malignancy to be ruled out by immediate pathological study. Simple mastectomy done on February 1, 1938. Pathological report (frozen section) carcinoma of the right breast.

Deep X-ray therapy treatment begun on February 4, 1938. Patient discharged to out-patient department on February 8, 1938, to continue deep X-ray therapy. Patient received three areas to right mammary area, anteriorly, posteriorly, and axillary. He was given 2,068 r to anterior field, 1,504 r to posterior, and 1,744 r to the axilla. The factors used were: 200 KVP, HVL, nine-tenths millimeter copper, filter one-half copper and one aluminum. Dosage 240 to 300 r to each area—one area treated daily. Patient completed therapy in Department of Radiology on March 3, 1938.

Patient returned on February 23, 1939. Operative scar well healed, no evidence of metastatic nodes in either axilla or supraclavicular area. Condition good. Patient next seen on October 7, 1940. Some pigmentation of skin noted over right anterior, post chest, and axilla. A 2.5 centimeter, freely movable, hard node present in right axilla. Left breast and axilla negative. Both supraclavicular areas negative. Node thought to be malignant. Patient received 1,600 r units to right axilla from October 7, 1940, through October 31, 1940. No regression of node noted.

Second admission to hospital on November 7, 1940, to get combined fever therapy and X-ray therapy to node in right axilla. During interval between February 8, 1938, and October 7, 1940, patient has been in excellent condition except for old cardiac lesion which necessitated digitalis medication.

P. E. (local). Hard 2.5 centimeter node in right axilla, freely movable. Slight pigmentation of skin noted. Left breast, axilla, and both supraclavicular areas negative.

X-ray chest. No definite evidence of metastases. "Boot-shaped" type heart.



Blood and urine essentially negative. Wassermann negative.

Fever therapy instituted on November 8, 1940. Temperature reached 105 degrees Fahrenheit at 3:15 P.M. Deep X-ray therapy given while temperature elevated. Dosage given 720 r. Treatment factors: 200 KVP, HVL, nine-tenths millimeter copper, ten by fifteen centimeter field, fifty centimeters distance, one-half copper and one aluminum filtration. Forty minutes, r m eighteen, right axilla. Patient discharged on November 9, 1940.

November 15, 1940, definite first degree erythema of skin in right axilla. Node still palpable in right axilla. No apparent change in size. A few very small nodes palpable in left axilla. Left breast and supraclavicular areas negative.

December 27, 1940, freely movable two centimeter node of a softer consistency than noted on previous examination present in right axilla. Definite pigmentation noted in right axilla. We feel that the node has become softer and smaller than noted on previous examination.

No. 2.—M. M., female patient, age thirty years, admitted to hospital on October 25, 1939, complaining of an "aching pain" in her left arm and shoulder. In August, 1939, patient visited out-patient department with above complaint. In out-patient department, lipoma thought to be cause of symptoms, and therefore removed on August 10, 1939. Symptoms relieved only to return with more intensity.

Symptomatic treatment continued until October 21, 1939, when X-ray of left shoulder revealed destructive changes involving the upper one-fourth of humerus with a suspicious pathological fracture. (See Fig. 1.)

P. E. Physical examination upon admission revealed excruciating pain upon movement of left arm. Extreme tenderness to palpation in region of left shoulder joint. Blood count, hemoglobin seventy per cent, RBC 3,750,000. On October 25, 1939, WBC 7,650, differential normal. On November 6, 1939, hemoglobin sixty-eight per cent, RBC 3,550,000, WBC 7,000, differential normal; urine examination negative. On October 27, 1940, blood calcium 9.8 milligrams per



Fig. 1.—X-ray of left shoulder joint showing destructive changes involving the upper one-fourth of humerus.



Fig. 2.—Recheck film of left shoulder joint shows that the lesion in the humerus is almost completely filled in. No evidence of any active pathology.



cent and phosphorus three milligrams per cent, NPN twenty-three. On October 25, 1939, Wassermann four + and Hinton positive. On October 31, 1939, eagle positive. Patient had twenty-five or thirty "shots" at another local hospital.

Incisional biopsy done on November 2, 1939, and was reported by pathologist as osteogenic sarcoma of humerus (frozen section) which was later confirmed by the permanent slides.

Deep X-ray therapy begun on November 10, 1939, and continued through December 4, 1939, 1,600 r to each of the two areas (anterior and posterior left shoulder joint).

Patient was readmitted to hospital on December 12, 1939, for combined fever therapy and deep X-ray therapy. On December 13, 1939, fever therapy given and temperature reached 104 degrees Fahrenheit, at which time patient was given 494 r units to anterior left shoulder (field ninety square centimeters) and 483 r units to posterior left shoulder (field ninety square centimeters). Factors used: 200 KVP, filter one copper and two aluminum, sixty centimeter distance, r m 10.5, five milliamperes. Treatment time forty-seven minutes anteriorly and forty-six minutes posteriorly. Patient discharged on December 14, 1939.

Recheck examination of left shoulder on September 27, 1940, showed that the lesion in the humerus was almost completely filled with new bone. No evidence of active pathology. Patient felt fine. No tenderness or pain upon motion of left arm. (See Fig. 2.)

December 12, 1940, patient seen in tumor clinic. No complaints. Weight 186 pounds. Slight atrophy of left shoulder muscles. Normal appearance of skin. No pain upon palpation or movement.

No. 3.—M. T., female patient, age sixty-three years, entered hospital on March 4, 1940, second admission, complaining of a "bad breast."

In July, 1939, patient noted a painless lump in midportion of right breast. This mass gradually increased in size and about December, 1939, a small ulcer developed beneath the nipple and began to discharge a

foul-smelling, hemorrhagic material. The mass and ulceration continued to increase in size until her admission. Patient has been receiving X-ray therapy since January 31, 1939, in out-patient department.

P. E. (local lesion). A shriveled right breast with a markedly retracted nipple. An ulcerated, transverse fissure runs across the inferior aspect of the right breast. A foul-smelling, hemorrhagic discharge exudes from this area. Marked axillary adenopathy present on right side. Left breast and axilla negative.

Clinical diagnosis of inoperable scirrhus carcinoma of the right breast made. Blood and urine examination essentially negative except for mild secondary anemia. X-ray of chest made on January 26, 1940. No evidence of pulmonary or osseous metastases noted. Biopsy on March 5, 1940. Pathological diagnosis: scirrhus carcinoma of right breast. Two courses of fever therapy combined with X-ray therapy given.

On March 8, 1940, fever therapy given; temperature at beginning of X-ray therapy 104 degrees Fahrenheit—605 r given. Factors 200 KVP, one copper and two aluminum filter, twenty by twenty field, sixty centimeters distance, eleven r/m. Projected dose was 1,000 r to anterior and 1,000 r to posterior field. Patient became restless and treatment had to be discontinued.

On March 14, 1940, fever therapy given. Temperature 104 degrees Fahrenheit at beginning of deep X-ray therapy—800 r given through post-scapular region. Field twenty by twenty centimeters. Factors as above. Patient discharged on March 20, 1940, mass in breast definitely softer and smaller, axillary area smaller.

Patient seen in follow-up clinic on November 4, 1940. Patient felt fine, had no complaints. Right breast showed evidence of marked scarring on its undersurface. Some induration with dimpling of skin noted. Skin is fixed to underlying tissues. In the right axilla, the formerly palpable nodes had entirely disappeared and there was a stony, hard induration underlying a scar that is present. The ulcerated lesion had healed completely.

No. 4.—S. B., colored male, age forty years, entered surgical out-patient department on August 2, 1940, and was referred to the tumor clinic. His chief complaint upon admission was "I have rheumatism in my left arm." Three months prior to this visit, he was cutting a piece of ice and experienced a little pain in his left arm. He used liniments and other medications without any benefit. Local physician told him he had rheumatism and treated him for same. He gradually began losing strength in this arm. Six weeks prior to admission to the out-patient department, he received a blow on his left shoulder while hanging a screen door. A "knot" developed at the place of trauma and has continued to enlarge up to the present. Patient was seen in the orthopedic clinic and X-ray of left arm and shoulder requested. X-ray revealed marked destruction of the upper one-third of the shaft of the left humerus with no evidence of any bone regeneration. The humeral head and glenoid cavity of the scapula showed multiple cystic changes. Some infiltration of soft tissues and a fusiform soft tissue swelling noted on films. A diagnosis of osteogenic sarcoma was made by the Department of Radiology. X-ray of chest on August 5, 1940, revealed a small area of infiltration in the right apex.

Tumor clinic diagnosis: osteogenic sarcoma of left humerus. Recommend combined fever therapy with deep X-ray therapy. Admitted to surgical department on August 7, 1940.

P. E. (local). Fusiform, hard tumor mass of upper one-third of right humerus, about the size of a small grapefruit. Mass is nontender and motion of arm only slightly impaired. Blood count essentially negative except for slight secondary anemia.

On August 9, 1940, patient given combined fever therapy and deep X-ray therapy. Temperature at beginning of X-ray therapy 106 degrees Fahrenheit—750 r units given to anterior and 750 r to posterior left arm. Factors used: 200 KVP, HVL, nine-tenths millimeter copper, five milliamperes, fifty centimeters distance, one-half copper and one aluminum filtration; field approximately fifteen by fifteen

centimeters, seventeen r m. Patient discharged on August 10, 1940.

Patient returned for follow-up on August 26, 1940. No skin changes noted over left arm. Tumor mass appeared to be slightly smaller as compared with previous examination on September 3, 1940. Chest recheck X-ray made. Destruction of the anterior extremity of the eighth rib, right side, noted for a distance of five centimeters. Destructive changes on the superior border of the right seventh rib also noted. Recheck of original chest film made on August 2, 1940, showed some destruction of anterior extremity of right eighth rib at this time.

On September 10, 1940, X-ray recheck of left shoulder and humerus showed an increase in the amount of destruction as compared with films made five weeks before. Patient received palliative X-ray therapy over rib metastases for pain. Some relief experienced, but patient appeared to be getting weaker. Patient's sister contacted over phone on December 27, 1940, and stated that he was much better and walking around.

No. 5.—B. A., colored female, entered hospital on June 12, 1940, complaining of a "knot" in her breast of five years' duration. While bathing five years ago patient detected a small mass in her breast (about the size of a five-cent piece.) It remained stationary for four years and during the fall of 1939, while picking cotton, her right breast became inflamed by the strap of the cotton bag rubbing against her breast. The breast became painful. She applied a dark salve given her by a physician, but states that no apparent relief was experienced and the breast continued to increase in size and bled on at least one occasion.

P. E. (local). Right breast contained a hard grapefruit size mass with an orange peel appearance. Nipple retracted. Scar present five centimeters above nipple, about one inch in diameter. Right axillary nodes hard and enlarged.

Blood count showed slight secondary anemia. On June 12, 1940, serology negative.

The patient was seen by the tumor clinic on June 13, 1940, and a diagnosis was made



of scirrhous carcinoma of right breast with right axillary metastases and recommended combined fever and X-ray therapy. No radical procedures.

Patient discharged on July 13, 1940. Patient returned for follow-up on August 23, 1940. Firm mass present in right breast, adherent to skin. Nodes palpable on right side. Surgical Department stated that they considered this an excellent result following X-ray therapy and fever therapy.

Patient returned on November 19, 1940, complaining of an inflamed right breast and backache. She was readmitted to surgical service. X-ray of pelvis and lumbosacral spine revealed destructive bony changes in the body of the third lumbar vertebra. Questionable area of destruction in the ala of the left side of the sacrum. X-ray of chest revealed no evidence of metastases to lungs or bony thorax.

The patient was again seen by the tumor clinic on November 22, 1940. Examination revealed a hard mass in right breast with areas of cystic degeneration. Multiple small subcutaneous nodules that probably represent skin metastases are scattered over the right and left mammary region. Adenopathy present in both axillae. Thickening present in region of areolar of left breast. Diagnosis made of scirrhous carcinoma of right breast with metastases to skin and vertebrae. Recommend palliative X-ray therapy over spine metastases for relief of pain.

Patient was given deep X-ray therapy over lumbar region of spine. After three or four treatments, patient felt improved. At present, December 29, 1940, patient is free of pain and wants to be discharged.

No. 6.—M. P., female patient, age forty-two years, admitted to hospital on October 29, 1939, on advice of her private physician, who told her she had a cystic tumor. She first noted pain in her breast in July. Breast became darker. The pain would come on once or twice a day and was sharp in nature.

P. E. Retraction of nipple in right breast. Nodule of tumor mass beneath and adherent to skin, just above nipple. Mass five and one-half centimeters in diameter. Left

breast negative as to tumor mass. Diagnoses: (1) carcinoma of right breast, with slight enlargement of anterior axillary lymph glands; (2) myxedema; (3) arthritis deformans.

Consultation to X-ray Department on October 30, 1939. No metastases to chest.

Consultation to surgery on November 2, 1939: biopsy to confirm scirrhous carcinoma of right breast. Consultation to tumor clinic on November 4, 1939: carcinoma of breast with no evidence of supraclavicular involvement. Recommend: (1) preoperative X-ray; (2) home for eight weeks; (3) surgery; (4) postoperative X-ray therapy. Treatment: deep X-ray therapy began on November 8, 1939, and ended November 21, 1939. (1) Right posterior lower thorax 900 r; (2) right upper thorax 600 r. Patient discharged on November 24, 1939.

Second admission. Patient returned on February 10, 1940, for operation after preoperative X-ray therapy. Operation on February 13, 1940. Halstead removal of right breast. Preoperative diagnosis: scirrhous carcinoma of breast. Pathological report: scirrhous carcinoma of breast. Postoperative X-ray begun on February 28, 1940, and ended March 15, 1940. Right upper midsupraclavicular 795 r; right axillary and lateral chest 765 r; right and post upper thorax 780 r. Patient discharged on March 16, 1940.

Third admission. Patient returned on August 27, 1940 for recheck. She had been suffering with pains in right scapula region and left chest wall. Now pains are located in lumbar region of back. X-ray examination reveals metastatic deposit in seventh rib. Treatment on October 2, 1940: fever therapy for three hours; X-ray therapy (a) left lateral thorax (over seventh rib posteriorly) 720 r.

On October 19, 1940, recheck of chest demonstrated evidence of healing of metastatic deposits involving the left seventh rib in the postaxillary line. Another area of metastases involving the fourth rib posteriorly, left. Patient discharged on October 26, 1940.



Fourth admission. Patient admitted on November 22, 1940, complaining of severe pains in lumbar region. X-ray treatment begun on November 25, 1940, and ended December 27, 1940. Right post lumbar 1,200 r, inframammary 1,400 r, right lateral 600 r.

X-ray examination reveals some destruction of the third lumbar vertebra. Left breast negative. Scar over anterior thorax smooth. No evidence of local recurrence. No axillary node palpable. Supraclavicular areas negative. Metastases in sixth and seventh ribs posteriorly as well as second rib posteriorly, left. Diagnosis: postoperative carcinoma of right breast with skeletal metastases.

#### SUMMARY

1. All cases treated were considered inoperable as well as incurable before the combined treatments were given.

2. Positive biopsy of malignancy was obtained in four cases. In the other two, one was an osteogenic sarcoma with metastases to ribs and was diagnosed roentgenologically. The other case was an obvious carcinoma of the breast with massive axillary metastases.

3. Although only one of the cases out of six is considered clinically and roentgenologically cured, the other five are living and fairly comfortable.

#### CONCLUSIONS

1. We feel that combined fever and deep X-ray therapy has produced beneficial results in some cases of far advanced, hopeless malignancies.

2. The results obtained by a combination of these modalities are superior to those we would have obtained by either one alone.

3. The effect on malignant adenopathy that heretofore has resisted all forms of therapy has been extremely encouraging.

4. Further investigations are being conducted as to the use of combined fever and deep X-ray therapy with surgery and biochemistry in earlier stages of malignancy.

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## PROSTATIC RESECTION—LANTERN SLIDE DEMONSTRATION\*

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I shall first discuss briefly the history of the more recent developments in trans-urethral prostatic resection with electricity.

About 1923 Wappler and Company of New York developed a cutting-current generator for Doctor Collins of New York. He reported hundreds of cases successfully treated by this method. Most of these cases were bars, contractures, and fibrosis of the bladder neck.

May I digress here to say that my recent observations in the study of the bladder neck with the retrograde telescope point to the fact that the condition so often called a median bar is in many cases a circular fibrosis of the bladder neck, and not simply a building up of fibrous connective tissue in the posterior lamella? The pathology was first described by Mercier and bears his name—Mercier's bar. In dealing with a complete circular fibrosis, if only that portion, say between five and seven o'clock<sup>1</sup> is resected, results are not good. Most of the fibrosis must be resected, and this can only be done by using the retrograde telescope to check on prostatic bladder junction.

But to return to my history. In treating these cases, Collins used an electrode called Collins' knife. In 1925, Dr. Maxamillian Stern of New York had the American Cystoscope Makers collaborate with him in developing what they called a resectoscope. This instrument did not prove successful for several reasons: it did not control hemorrhage; it was too delicate; it had an all-metal sheath, and was forever shorting and burning out wire loops, telescope lamps, etc. After Stern gave up using the instrument, Dr. T. M. Davis of Greenville, South Carolina, began experimenting with it. He made it more durable, and by increasing the size of the wire loop made it possible to remove larger pieces

of tissue. It was then called the Stern-Davis resectoscope.

Also about this time Wappler and Company came out with a new, powerful, radio-tube cutting current—the McCarthy surgical unit. It was supposed to have radio-tube coagulation current, but Davis proved that this current would not control hemorrhage effectively. He developed an electromagnetic foot-switch which enabled him to switch from the radio-tube current to the old diathermy or spark gap which controls hemorrhage beautifully. He claimed, though, that the radio-tube current cut too well and that there was too much bleeding, so he collaborated with Liebel Florsheim and Company of Cincinnati, who had been making the Bovie surgical unit. Their result was called Davis-Bovie surgical unit. It was an all-spark-gap machine—spark-gap cutting and spark-gap coagulation.

About this time, McCarthy of New York, working with Wappler and Company, produced the McCarthy visualized prostatic electrotome, but later called it the Stern-McCarthy electrotome, because the wire loop was Stern's idea. A controversy now arose between McCarthy, advocating the radio-tube current, and Davis, advocating the spark-gap current for cutting, but the spark gap won in favor over the radio tube.

The Stern-McCarthy electrotome was more ideal than the Stern-Davis resectoscope. It had a bakelite sheath, which insulated the patient against shock, and also prevented shorts, burning out loops, lamps, and telescopes. A battery was used to light the instrument instead of a reostat. The loops were bigger so that much larger pieces of tissue could be removed. Vision was much better with the field of operation kept almost constantly in view. Consequently, the Stern-McCarthy electrotome is today largely used.

In 1931, Doctor Davis read his first paper before the American Urological Association in Memphis. He astounded his audience by reporting 250 cases without a death. His operation appeared so simple that men all

\*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.

<sup>1</sup>Divide the circle of the bladder neck into the hours of the clock; five to seven o'clock, then, would be the lower portion.

over the country attempted it, with a terrific mortality from hemorrhage, sepsis, and embolism. Experts Alcock and Day reported mortality of thirty per cent and twenty-five per cent, respectively, in their first fifty cases. I leave you to imagine the mortality of cases in the hands of the novice.

On December 6, 1932, before the Knox County Medical Society I reported eighteen cases treated with roller electrode cutting current—the same current which was used with the wire loop for resection. The roller was applied to the bladder neck and all encroaching prostatic tissue. This was described as a shrinkage or dehydration method.

Next, in April, 1933, before the Tennessee State Medical Association, I reported thirty-five cases treated in the same way. By November, I was able to report sixty-six cases before the Southern Medical Association. But, by 1934, some of the first cases treated were returning and required further treatment.

In June, 1935, before the Upper Cumberland Medical Association, I described a new technique, and later in 1936 discussed this technique before the Tennessee State Medical Association at Memphis. I also discussed a symposium on prostatic resection at the American Medical Association at Kansas City in 1936.

Lantern slides, please. These artist sketches were made by Mr. David Martin, staff artist for the Tennessee Valley Authority, and instructor of art at the University of Tennessee. He sat on a stool by me, and as I set the instrument, he produced what he saw. There are six views before operation—right angle, foroblique, and retrograde telescope. By this time the spinal anesthesia was wearing off. Next morning the operation was done. The artist did seven more pictures, progressive steps of the operation, and six views of the completed operation.

Technique: Apply roller electrode to all encroaching prostatic tissue with cutting current set the same as for resection with wire loop or even more current if desired. This cuts off about one-third of the blood supply to all hypertrophied portion of the

prostate gland, causing dehydration and shrinkage and sealing of lymphatics.

Next a modified punctate electrode, or knife electrode, is used to make grooves in the bladder neck at three, five, seven, and nine o'clock. The grooves at five and seven o'clock sever all large vessels where they enter at these points as proven by Flock's work on arterial distribution within prostatic gland in the *Journal of Urology* for April, 1937. In cases that have a middle lobe and lateral lobes pathology, these grooves are made in the sulcus between the middle and lateral lobes, because Flocks has positively demonstrated that the large vessels enter at these points, and the middle lobe receives all of its blood supply from the inner group of arteries entering here. This cuts off all of the blood supply to the middle lobe.

After these grooves are made, a check with the retrograde telescope shows how near the back side of the groove is to the bladder wall. If necessary, the grooves are deepened to within about one-fourth inch of the bladder wall. Now, as the tube current cuts better, the wire loop is used with no fear of hemorrhage, since the blood supply has already been cut off except from the small capsular group of vessels coming in from behind. The portion at the bladder neck is first resected, thus connecting the grooves. The back edge of the groove may be seen with foroblique telescope, and it also shows proximity of the bladder wall. This is very important, since cutting the bladder wall is always fatal. By thus first resecting at the bladder neck, all large vessels entering here are severed, and when the proximal lateral lobes are removed out to verumontanum, there is very little or no hemorrhage until the verumontanum is reached, where about ten per cent of the blood supply comes in from the capsular group of arteries. Sometimes this bleeding is rather difficult to control, because the nearness of the external sphincter makes overuse of the coagulating current unwise. A good-sized twenty-four or twenty-six French indwelling catheter will control this hemorrhage, since these vessels are not large.



One could discuss this at great length and still not cover the subject. I have tried to be brief and concise, hoping that many other important points would be brought out in the discussion. My object has been to simplify this technique and make the procedure reasonably safe in the hands of younger men just beginning this work and naturally who are not experts, and recalling the statement of the late Robert Day of Los Angeles that the mortality rate accompanying prostatic resection education was almost prohibitive.

The advantages of this method are its lack of serious bleeding, sepsis, and embolism. By shrinkage and toughening of prostatic tissue one is enabled to mold the bladder neck (a point brought out by Clinton Smith of Kansas City) and to lessen the amount of tissue to be removed. Since the tissue is hard, it does not fall in on the field of vision as some even have described, and the hemorrhage is seen.

It is best first to remove the middle lobe out to the verumontanum in order to allow the lateral lobes to fall in. Checking with the retrograde telescope is important so that there may be no intravesicle tissue or anterior lobe present. You may set the foroblique telescope at verumontanum and get a good view into the bladder and still have intravesicle lobes present. If this tissue is not removed, the result will not be good.

I cannot stress the use of the retrograde telescope enough. Mr. Wappler told me in 1937 that very few were using it.

#### DESCRIPTION OF LANTERN SLIDES IN PROSTATIC RESECTION

The electric generator used in developing the current doing this work is shown. It is the comprex radio knife and a separate set spark gap for the control of hemorrhage. The next slide will show the instrument used in doing this work. First is the McCarthy visualized prostatic electrotome which has in it the foroblique telescope used with the working element in performing this operation.

Next is an extra foroblique telescope kept in reserve lest a telescope burn out. Next

is the right angle lens telescope. Next the retrograde lens telescope. The electrodes used are first the roller electrode and next the cutting knife electrode and next the wire loop electrode as used by all operators doing this type of operation.

The first picture is a view with the right angle lens telescope of middle lobe. The instrument is set to show the sulcus between the middle and the lateral lobes, but the instrument must have slipped into the bladder sufficiently that these sulci did not show. Next picture is right angle telescope set at verumontanum. The white body in front is the verumontanum. This picture is slightly distorted, because to the left of the verumontanum you see the sulcus which ordinarily does not show when instrument is set at this location.

The slightest movement of an instrument at the bladder neck gets off the field of vision. The artist evidently was a little confused in this picture. One sees the lateral lobes meeting in mid-line just back of the verumontanum.

Next is view with right angle telescope of lateral lobes. This is portion of lateral lobes between the two pictures previously shown; that is, in the prostatic urethra between the verumontanum and the bladder neck. Next shows the verumontanum and lateral lobes viewed with the foroblique telescope; that means one is looking straight forward and obliquely.

Next is the same view with the telescope introduced sufficiently forward into the bladder and tilted downward slightly which brings the middle lobe into view. This is a pedunculated middle lobe; the Albarran type. The next is the same view with the instrument pulled out a little closer to the verumontanum, which simply shows more of the lateral lobes and less of the middle lobe. In all of these pictures, the light area above is the bladder cavity. This space, while viewed with the instrument, is dark instead of light. The next picture is a view of the pedunculated middle lobe as seen through the retrograde telescope. This lobe is hanging down free in the bladder cavity.

Next picture is first step of the operation. The roller electrode has been applied

to the middle lobe and both lateral lobes—in fact, all encroaching prostatic tissue. This picture can be compared with picture No. 4 because the foroblique telescope is set at the verumontanum in both views. One sees exactly what has happened to this tissue. I intended to use the retrograde telescope to show what effect the roller alone had had on the middle lobe, but being in a hurry I forgot to use it.

The second step of operation: The cutting electrode of my own design is used in making a groove at five o'clock on the internal sphincter. Next step the same electrode is used in making a groove at seven o'clock on the internal sphincter. These two grooves sever all the large vessels that enter at these points. In the commissural type of middle lobe these grooves should be made in the sulcus between the middle and lateral lobes. As Flocks has so beautifully demonstrated, all of the large vessels enter at these points to supply all of the middle lobe.

At this time I will show a semidiagrammatic drawing taken from Flocks' work on the arterial distribution within the prostate gland. This picture very graphically reveals exactly how these arteries enter and how they are distributed. He described two separate groups of arteries. The so-called internal or urethral group enter at about five and seven o'clock at the internal sphincter or prostatic vesicle juncture. They can be seen entering and supplying all of the middle lobe and extending down under the mucous membrane in the lateral lobes to the verumontanum. One sees the capsular group of arteries entering from behind supplying blood to the false capsule. These are small terminal vessels that never vary in size; whereas, in the urethral group of arteries the size is in proportion to the hypertrophy of the gland. In enormous hypertrophy there are very large vessels. One can very readily see why this would add great danger from hemorrhage in cutting one of these large vessels without any preliminary hemorrhage control.

In my opinion, the wonderful demonstration carried out by Flocks, which proves beyond a question of doubt the exact arterial

distribution within the prostate gland, backs up the technique described in this paper. Next step is a groove at three o'clock on the internal sphincter. Next a groove just opposite at nine o'clock. After using the technique as previously described, a wire loop is used with the cutting current electrode tube current. To connect these grooves, first all of the tissue at the prostatic vesicle juncture is removed. By so doing practically all of the large vessels are severed, and the remaining portion of the operation is almost bloodless with exception of some bleeding from the small capsular group of arteries coming in from behind. I then remove all of the tissue between five and seven o'clock, including the middle lobe and part of the lateral lobes out to the verumontanum. This allows the lateral lobes to fall in and make the finish of the operation much easier. It is important to check with the retrograde lens occasionally.

Next views are of the completed operation. First of the prostatic vesicle juncture with retrograde telescope set at nine o'clock. Next view is just opposite to this with instrument set at three o'clock. One sees the bladder wall. The white area is the cut surface of the prostate gland. Next is retrograde telescope set at six o'clock. This picture should be compared with the ones showing the middle lobe hanging down into the bladder. One sees that all of this lobe has been completely removed. As in the others, the red area is the bladder wall and the white the cut surface of the prostate gland.

The next three pictures are seen through the foroblique telescope; one at nine o'clock and one at three o'clock and the other at six o'clock. The white area is the cut surface of the prostate gland. The dark area is the bladder. In this case virtually a prostatectomy was done, as one can plainly see the muscular fibers of the false capsule. Notice the smooth surface. Next picture is a view with foroblique telescope set at verumontanum. This is a clear view into the bladder. There are no bulging masses of tissue. This picture should be compared with picture No. 4 with the instrument at



verumontanum before anything had been done.

The next picture is a microscopic section of adenomatous hypertrophy of the prostate gland. Next picture is a section of prostate gland after it had been treated with the roller electrode. One sees very few glands in this picture because they have been shrunk to such an extent. This represents one centimeter in depth. The next pictures are taken from Flocks' work. They are autopsy specimens. These patients had had previous prostatic resection. One sees the smooth cut surface at the prostatic vesicle juncture. Out beyond toward the verumontanum there are large bulging masses of hypoplastic tissue, which, having a very poor blood supply, consequently causes infection and late hemorrhage, thereby interfering with prompt healing. Next view shows bladder neck as viewed from behind, showing bulging masses of hyperplastic tissue with necrotic surfaces.

These cases had gotten good functional results. Next picture shows a fine result, as only one small bulging nodule remains. Clean-cut surface of prostate gland extending from the prostatic vesicle juncture out to the verumontanum can be seen.

Flocks has proven by numerous autopsies and clinical results that it is most important not to leave bulging masses of hyperplastic tissue.

#### DISCUSSION

DR. A. D. MASON (Memphis): Doctor Neil has presented to us a splendid address on the subject of prostatic resection, at which he is quite a past master, and I feel there is very little to be added to the paper. One thing I am glad to hear is that Doctor Neil is still an exponent of the tube-cutting machine rather than the spark-gap machine. We have felt all the time that we had much better results with the tube machine, and that it was certainly a much better cutting instrument than the spark-gap machine. We have adhered right along to the vacuum tube machine as our cutting instrument, although, of course, you do have slightly more bleeding, and you have to be a little more careful about the control of your bleeding with this machine because the current does not have the deep hemostatic effect that the spark-gap machine has. In the microscopic picture, a cross section of the resected tissue as well as a cross section of the remaining gland (which we studied particularly in our early cases and in those

cases in which for some reason we have had to go back in and have been able to get a piece of tissue later on), we have found that there was much less degree of destruction of the remaining tissue, much less slough there, and late secondary hemorrhages are practically zero when using the tube-cutting current rather than the spark-gap machine.

At most urological meetings you hear the men get up and talk about what they do when patients start hemorrhaging two or three weeks after operation; but, as a matter of fact, we never had to bother about that at all, and I think the reason lies in the type of cutting current used.

This operation now has reached the point where it is a well-accepted surgical procedure, and in properly selected cases in the hands of expert operators like Doctor Neil, good results should be almost uniformly obtained. It certainly has a very definite place in urological surgery.

DR. G. MADISON ROBERTS: May I state for the information of those who were present at the state meeting in Chattanooga that my discussion of Doctor Neil's paper as published here is not the one I gave at the time of the meeting because I was not present when the original paper was read and only entered when he was giving his lantern slide demonstrations? Since that time he has supplied me with a copy of his paper.

Doctor Neil has given us a splendid paper on transurethral prostatic resections. In the beginning he has given us a short resumé of the history of this operation, which I think can be dated from Collins' original work. I agree with everything he has said with possibly one or two exceptions.

May I say by way of explanation that I began resecting prostates before the spark-gap machine for this work was developed. I tried out the old McCarthy cutting surgical unit and the Davis-Sterns resectoscope. I had many trials and tribulations; however, I was very fortunate in not losing any patients until I had done seventy-one, and I think Doctor Neil's so-called rolling technique accounted for this nil mortality. As he has experienced, I also have had many of the original cases to return for further surgery, and I am still seeing one occasionally.

It appears from Doctor Neil's statement here that when he ordered his resectoscope he received one of the original rolling instruments, which was very quickly discarded; that is, the rolling feature, and a hemostatic loop which was heavier than the cutting loop was established in its place. We all had our "rolling days" or else we had a very high mortality. I do not think there is any question at all but what Doctors Alcock and Day did some real resections or their mortality would not have been so high.

It was fortunate, however, for my patients that I was unable to get my machine to cut as perfectly as I wished. I was able to control the hemorrhage by doing the same thing that Doctor Davis did; that is, I had constructed a magnetic switch, by



the use of which I was able to run a regular diathermy current through my McCarthy surgical unit and thus control the hemorrhage. I will state that by the use of the variable dehydration currents on the Davis-Bovie unit I have been able to control the depth of my burning. In other words, the machine is set so that it burns very deep for the first few strokes at five and seven o'clock, as Doctor Neil has explained to you, and I think I obtain the same results that he obtains with his roller; however, I may be wrong in this. It may be that I do not understand fully the nature of the current he has explained.<sup>1</sup>

I have enjoyed this paper very much, especially the lantern slide demonstrations of his technique. I know Doctor Neil has done some good work, and I have not at any time heard anything except highest praise from his patients, a few of which I have seen following operation.

DR. J. B. NEIL (closing): I appreciate the discussion very much, especially the compliments of Doctor Mason. I hoped there would be a lot of fellows here to ride me. If everybody compliments you, it does not amount to very much, but if they criticize you, you know you are accomplishing something.

In answer to Doctor Mason, the reason I am using the tube current is because I have cut off all the blood supply with the exception of the capsular group of arteries coming in from behind. I do not fear hemorrhage, since the only hemorrhage in this operation is from these small terminal vessels. When making a cut, you can see them; they are little sprayers. By turning on the coagulating or spark gap, they can be seen instantly.

The great advantage of using the tube current in this method, as Doctor Mason brought out, is that these cases are usually healed clean in thirty days with the urine clear.

Doctor Roberts should have gotten here and heard the first part of my paper. I brought out all the points that he brought out in regard to the spark-gap machine and all of that early history connected with prostatic resection. He does not quite

grasp what I am doing, because he speaks of this tissue that had been destroyed and the slough that is going to take place. The picture that I showed here is for about a centimeter in depth. I have proved that by microscopic section of tissue that had been treated with the roller electrode. It gives this sealing of vessels for a little over a centimeter in depth. The tissue is all removed. What he spoke of as the white area is simply the light, not deep, coagulation that is done with the loop after finishing the operation to control these little bleeders.

The beauty about the spark gap with this small unit is a set gap. It is set at the factory so as not to coagulate too deeply. The tissue left has a wonderful blood supply from the capsular group coming in from behind, and that is of great advantage in this operation; you do not leave bulging masses of hyperplastic tissue to give late hemorrhage, late infection, and all the other troubles we have had heretofore.

One advantage to this is that there is less tissue to remove because of shrinkage to, say, a third. This tissue is hard and one piece removed is equal possibly to four or five cuts with the wire loop before shrinkage.

Another advantage, as I bring out later in this paper, is that this toughens and hardens this tissue to such an extent that one is able to mold the bladder neck; whereas, with enormous, soft, boggy prostates, a cut in this tissue allows the prostate to fall on big bleeders which cannot be seen. One has to see this hemorrhage to stop it, and that is one advantage to applying the roller beforehand. I think that was brought out by Clinton Smith in the *Journal of Urology* in 1935, the July issue. In a symposium I discussed in Kansas City in 1936 I described this technique. That was before Floeks had done any of this work. Doctor Aleoek, who was one of the essayists in this symposium, was sitting on the front row. That was in April of 1936. In April of 1937, this work came out at the University of Iowa. I showed a scientific exhibit in Oklahoma City in 1938, and Doctor McMartin, who at that time was president of the Southwestern Branch of the American Urological Association, told me that Doctor Aleoek at that time was using the technique of making these grooves at five and seven o'clock.

<sup>1</sup>I use a knife electrode of my own design to make these grooves at five and seven o'clock. The knife electrode cuts, but not too cleanly. It is of such dimensions that at the same time it cuts it seals these large vessels. (This comment by Dr. Neil.)

# OCCUPATIONAL DERMATOSES\*

EMMETT R. HALL, M.D., Memphis

The term occupational or industrial dermatosis applies to all dermatoses directly attributed to or resulting from contact with various agents used in the many trades and professions. Such dermatosis must arise from and in the course of employment, have a direct relation to the work performed, and shall not be connected in any way with outside precipitating or causative agents.

This paper will deal more with the legal aspect and the industrial hygiene problems in Tennessee and less with diagnosis and treatment.

Just as a workman should receive compensation for an injury which he sustains in the course of his employment to compensate him in some way for his loss, so also should a workman receive compensation for a disease which he contracts as the result of conditions of his employment.

All states except two have the workman's compensation law, but this law is by no means uniform. Today twenty-four states, Tennessee not included, make provisions for all or some occupational diseases, most of them listing the compensable diseases, Kentucky and West Virginia listing only one disease, silicosis. In eight states and the District of Columbia, the law covers occupational diseases in a blanket order.

In late years there has been a trend toward free choice of physicians, both in statutory amendments and administrative practice, but in spite of this trend the employer or insurance carrier still has the right to choose the physician, or hospital and usually determines the physician's fee. This is to be regretted because he must accept the physician, hospital, or nurse regardless of competency.

The workman's compensation law in Tennessee relates only to accidents. We hope and believe that some day it will include occupational diseases. In July, 1937, the Department of Public Health added the Department of Industrial Hygiene Service.

A survey was organized for the purpose of cooperating with industry, labor, and others concerned in efforts to safeguard the health of industrial workers. Their initial work was a survey in the city of Memphis and Shelby County and later similar reports made in other areas of the state, a combined report representing the findings in all plants surveyed in the state. I shall quote freely from the Memphis and Shelby County survey. There were 313 plants and 25,826 workers in the survey; 90.4 per cent of the plants had workman's compensation insurance of acceptable type which included only accidents; only one plant had a full-time physician; 23.6 per cent of the plants employed physicians on part-time bases. Such physicians were available whenever they were needed and their services were not limited to treatment of accidents.

Hand-washing facilities were provided for in 97.3 per cent, but 26.6 per cent used common towels. This could easily be the source of infection of a great many suffering from pyogenic and fungus infection and possibly syphilis.

The authors of the survey rightly admit the evaluation of exposure of workers to certain physical conditions and materials are the most important phases in the industrial hygiene problems. They found that 10.5 per cent of the workers were exposed to materials listed as dermatitis producers.

Diseases of the skin due to occupation represent ten to twelve per cent of all disease of the skin according to the best statistics available. They account for approximately sixty-five per cent of all disease due to occupational factors, not including industrial accidents, which cause considerable disability, usually partial but often complete. Many cases are not recognized as possible industrial until a considerable time has elapsed after the onset, and still more cases are not handled properly as industrial cases from the outset. In many, the dermatosis is preventable and much can be done to lessen the disability. There should be an educational program provided by

\*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.



employer with the aid of insurance companies and safety engineering groups. The members of the medical profession as a whole should have further information about occupational dermatological conditions and should have their attention drawn to the frequency and to the various manifestations of these conditions.

### DIAGNOSIS

Two questions arise with regard to the basic etiological factors. First, is the eruption a result of a direct irritant as strong acids or alkalies, or second, is it due to an individual idiosyncrasy on the part of the patient? It makes little difference as to which is the precipitating agent in so far as treatment is concerned, but it is sometimes of value from a medicolegal standpoint. The susceptibility as in most allergic diseases may be familial or acquired, and may vary from time to time in the same patient and in different patients. In addition to the hypersensitive states, many other factors may precipitate these eruptions, such as exercise, sweating, or oily skins. Especially is the latter true where contact with oil solvent precipitating agents seem to initiate the trouble. The excessive use of soap and water, or the opposite extreme, may, at times, leave the skin in such a condition as to hasten the development of the skin trouble.

Many cases of trade dermatitis occur annually, not by the substances encountered at work, but by the removal of these substances with methods harmful to the skin. Workers whose occupation requires the use of paints, varnish, stains, and lacquers invariably use turpentine, paint thinners, or a solution of sodium carbonate; mechanics use gasoline; machinists use kerosene. Printers, typesetters, and lithographers employ type wash, turpentine, or kerosene. A number of writers have stressed the need of education regarding the following important factors in the prevention of industrial dermatitis: the use and abuse of soap, the use of soap substitutes, the proper and improper use of cleansing agents other than soap, the use of emollients and protecting agents, and the

unnecessary exposure of the skin to primary irritants and sensitizing substances.

The clinical appearance of the eruptions of occupational dermatosis are of such a great variety that a complete discussion here is out of the question. It will suffice here to mention in a general way some of the characteristic eruptions. The most common type which we see is usually ushered in with erythema, versiculation, edema, later eczematous formation. The eruption depends largely upon the area of the skin affected, the precipitating agent, the duration of the affection, and the presence of secondary manifestations. Follicular involvement is common in the workers who handle oil and greases. The acids and alkalies and some metallic salts produce various types of lesions, varying from a mild erythema to deep burns. Silver, on the other hand, may produce simply a bluish-black discoloration known as argyria. The eruptions produced by arsenic are well known and need no discussion here. The various dusts, either mineral, chemical, or vegetable, may produce dermatosis of the inflammatory types. Lime, one of the most common offenders of this group, seen especially in those workers handling fertilizers, cement, etc., will produce eruptions similar to that of arsenic. Rubber workers usually present superficial to deep inflammatory areas on the exposed parts. This may be due to the sulphur content or to the contained dyes or a sensitivity to the crude rubber itself. Among the professional workers, sensitization to rubber gloves and novocaine are common findings. Occupational eruptions have several characteristics in common. They are most often situated upon the exposed areas; the hands, fingers, forearms, neck, and face being the most frequent sites. The location of the affection varies, of course, with the particular trade. The hotel, restaurant, and drugstore employees present hand, finger, and forearm involvement; the filling station attendant or oil worker, leg and forearm involvement; and cement workers, in addition to the above-mentioned areas, usually have extensive body eruptions, especially about the shoulders and trunk. In individuals highly



allergic to the precipitating factor, generalized or universal involvement is not uncommon.

The general percentage of uncomplicated occupational dermatosis tends to clear and show marked improvement within ten days or two weeks after removal of the exciting agent. Failure to do so should lead the physician to investigate the correctness of his diagnosis and treatment or intentional or unintentional lack of cooperation on the part of the patient. Careful history in most cases will reveal improvement during vacation or often complete recovery with recurrence on return to work.

### TREATMENT

Generally speaking, the treatment for occupational dermatosis is the same as any acute or chronic inflammatory condition of the skin. It is highly desirable, and at times imperative that the causative agent be entirely removed. In some cases, this may mean a change of occupation, the giving up of a trade or profession and the individual left without means of a livelihood. Every case should be treated promptly because the acute cases and primary attacks are much more amenable to treatment after recovery, and with due precaution the individual may be able to resume his work. If the case is permitted to become chronic with the resulting changes in the skin, the outcome is much more unfavorable and the possibility of continuing his same occupation is less.

### CONCLUSION

1. Most occupational diseases are preventable.

2. Diseases of the skin account for approximately sixty-five per cent of occupational diseases, not including industrial accidents.

3. Many cases of trade dermatitis occur annually, not by the substances encountered at work, but by the removal of these substances with methods harmful to the skin.

4. Tennessee Workman's Compensation Law does not cover any occupational disease.

### DISCUSSION

DR. HOWARD KING (Nashville): Mr. President and Members of the Association: As far as I

can remember no one has ever presented a discussion of this problem to this organization before in its history. I am sure that many of you as physicians and surgeons perhaps have nothing whatever to do with the treatment of occupational disturbances, accidental or otherwise. Many of you are devoting perhaps nearly all of your time to the handling of occupational troubles, and I think it is worth emphasizing that the State of Tennessee in its statutory laws regulating the compensation of an injured or disabled employee makes no provision whatever for the care of one who is injured by an industrial dermatosis. Frequently a patient not only has an acute injury of the skin directly due, solely due, to his occupation, which may last months, years, or permanently disable him so far as that particular occupation is concerned. Frequently that is a problem not only to the employer, but to insurance companies covering the employer. It seems to me that the State of Tennessee in its laws should have the law amended so as to take care of these individuals who can be undoubtedly proven to have injuries of the skin that disable them and put them away from their occupation.

When one is faced with patients of this kind, at times it is not easy to determine whether or not the patient's trouble is solely due to his occupational contact. For example, if a patient, a carpenter we will say, is driving nails and a nail flies back and hits him in his eye, there is no question in the world but that his injury was due solely to his occupation, but if a patient comes to you with an acute or chronic eczematoid eruption of his hands which gets so severe as to disable him from work, it may be a very hard problem to say whether or not that man's eruption is solely due to his occupation. In such instances, it calls for consultation on the part of the surgeon or the physician who does the work for the plants or industries, and even then the dermatologist may not be able always to settle the question.

You who may be interested in these affairs and are connected with various industrial organizations may find it worth your while to read in last year's *Archives of Dermatology* a symposium in regard to the various aspects of this which was handled by one man taking up certain aspects; for instance, the medicolegal, and four or five others embracing the whole subject, a profound discussion of the whole problem.

I want to compliment the essayist for covering this entire subject in so brief a time. One phase that was not touched upon directly, however, was this. Let us take for example a patient who has what we commonly call chronic ringworm of the feet, sometimes involving the hands, or let us say only the feet, who works in a paint factory or a chemical factory of some nature, and who develops a vesicular, somewhat marginal, somewhat interdigital eczematoid eruption of his hands, which becomes so severe as to disable him temporarily. Then we have quite a serious question as to whether this man has an extension of the fungus infection

which carried from his feet to his hands or whether there is a mixture of fungus infection which opened up some avenues of broken skin and caused them to become sensitive to chemical agents that he was dealing with which under previous conditions did not affect him at all. Right at this time that patient may develop a sensitivity which may linger with him all his life and put him out of business, so far as that occupation is concerned.

Another question that was touched upon by the essayist which strikes me as quite valuable is that certain patients when they are through with their day's toil or their night's toil, as the case may be, are accustomed to take baths at the industrial plant with very strong soaps, or, as he said, coal oil, mineral spirits, or whatnot, and the dermatosis

may be solely due to that feature of the employment and not due to other contacts the whole day long. The ordinary plant physician may not be aware of that at all; he may not take it into consideration, but the dermatologist may be able to help him and may entirely solve the problem in a short time by protecting the man from strong soaps and other cleansing agents. I think this has been a very timely discussion. This is worth the thought of the legislative committee with respect to the compensation statute amendments that may come up from time to time. There is a certain group of people disabled by dermatosis directly and solely due to their occupations, and those people are entitled to protection by law.

# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### THE FUTURE

Anatole France said: "The future is hidden from us all, even from those who make it." The truth of this statement becomes increasingly obvious as one's observation of life increases.

At the beginning of 1941 no one can be sure of what may happen within the year—not even those most intimately connected with the happenings at the present moment.

We witness from time to time the efforts of those who undertake to make the future what they would have it be. Very often it happens that the future does not work out as the planners plan it.

It seems that in recent years a lot of people have grown up and developed a notion that they can sit at a desk and draw up a formula for the future—a formula different from that which has contributed to make the best features of the past. They seem to have acquired illusions with regard

to their ability to determine what the future should be and as regards their ability to make it what they would have it be.

It must have been a sage who said: "If a man is not a Red at twenty, there is something the matter with his heart. If he is a Red at forty, there is something wrong with his head."

It is an easy matter to see faults here and there in every individual and in every community and state. It is an easy matter to become a visionary. This is particularly true if one has not had practical experience with actualities.

It seems reasonably easy to evolve a theory which is attractive to a fairly large number of people.

A story appeared in a recent issue of the *American Magazine* which reveals the astounding truth that a relatively large number of apparently intelligent people spend large sums of money with people who pretend they can look at the future and help them make their future just what they would have it be. Add to this a list of politicians and uplifters of various gradations who are able to convince a fairly large number of people that if the people will just turn over to them a sufficient amount of their earnings and do their biddings without reserve they in turn will be able to give to the people the kind of future they really need.

Disillusionment comes, sometimes early, sometimes late. The past contains lessons which should guide us in the direction we should go, but the lessons of experience are often thrown aside for a more attractive illusion.

The man who invented dynamite thought he had made a discovery which would relieve humanity of many burdens, but he could not plan the future of the stuff he made. When it was used as an instrument of destruction, it is said he committed suicide.

There is a story to the effect that when a socialist had completed a discussion of his theories in a London park one of his practical-minded listeners asked him what he would do if he were Prime Minister. His



reply to the question was: "I expect it would be to disappoint my followers."

It is perfectly possible for people to keep their feet on the ground—to draw upon lessons of the past and avoid the tragedies that have come to those who have followed an attractive illusion.

#### OUR ETHICAL DRUG MANUFACTURERS

Under "News Notes and Comments" of this issue will be found some brief excerpts from a news item under the heading, "Three Quarters of a Century for Parke, Davis & Company."

The word "commercial" is too often used to convey a sinister meaning. The implication is that a person or a firm cannot be commercial and ethical at the same time. Nothing is further from the truth. There are many manufacturers of drugs in the United States who are both commercial and ethical. In addition to this, the value of their research work cannot be estimated.

There comes to mind at this moment thoughts of the losses which must have been sustained by the manufacturers who invested so much in the production of pneumonia sera. Just as they were about ready to get some returns, on the expenditures in research, sulfapyridine came into use. The losses must have been enormous, but we have not heard of complaint.

There is a fine relationship between the medical profession and the ethical drug manufacturers in the United States. This is of the greatest benefit to the public.

Yes, a drug house can be commercial and ethical. In addition to this, it can and does contribute to the public welfare in larger measure than many institutions supposed to be for welfare alone.

#### THE BASIC SCIENCE BILL

Securing the passage of the Basic Science Bill by the legislature now in session is the major legislative objective of the medical profession in Tennessee. It was made so by action of the House of Delegates in Chattanooga last year.

Experience in other states has demonstrated its effectiveness in maintaining a reasonably high standard of qualification

by those who engage in the practice of any form of the healing art.

The people of Tennessee have recognized three forms of the healing art by Acts of the Legislature. This recognition has been extended by the enactment of laws which have created boards of examiners in medicine, osteopathy, and chiropractic.

The discussion is not on the merits or demerits of any form of the healing art. Our contention is, and must be, that those who are permitted to engage in any form of practice should have a reasonable knowledge of the basic sciences. When this knowledge is demonstrated then the applicant is ready to stand an examination before either of the three boards above mentioned in the practical branches pertaining to the form he proposes to practice.

A few features of the bill deserve emphasis. Among them are the following:

1. The bill provides that the board of examiners in the basic sciences shall be composed of men with a knowledge of the basic sciences and shall not be practitioners of any form of the healing art. This provision should remove any prejudice to the effect that the medical profession seeks to dominate the board or its actions.

2. Another provision is to the effect that the board shall not require the applicant to disclose the school in which he received his education in the basic sciences nor the type of practice he intends to engage in. This should serve to remove any possible prejudice against any particular school or any particular form of practice.

## DEATHS

#### CORRECTION

In the September JOURNAL we carried a notice of the death of Dr. Waldo McLister, Brighton. Since the publication of the last issue we received a letter stating that Dr. William A. L. McLister had died in August, and that we were in error in reporting the death of Dr. Waldo A. L. McLister.

Our source of information was a newspaper clipping and we do not know whether

the error was made by the newspaper or by us.

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DR. L. L. TILLEY

Dr. L. L. Tilley, Lebanon; Vanderbilt University, School of Medicine, Nashville, 1894; aged seventy-one; died December 18, 1940, following an illness of several weeks.

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DR. H. QUIGG FLETCHER

Dr. H. Quigg Fletcher, Chattanooga; Johns Hopkins University School of Medicine, Baltimore, 1909; aged fifty-seven; died December 7, 1940, following a short illness.

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DR. C. J. CARMICHAEL

Dr. C. J. Carmichael, Knoxville; Vanderbilt University, School of Medicine, Nashville, 1902; aged sixty-one; died October 9, 1940.

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DR. DAVID MORGAN WOODWARD

Dr. David Morgan Woodward, Huntsville; Chattanooga Medical College, Chattanooga, 1906; died January 1, 1941.

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DR. FRANK B. EASLEY

Dr. Frank B. Easley, Chattanooga; Harvard University Medical School, Boston, 1927; aged thirty-nine; died December 29, 1940.

## RESOLUTIONS

RESOLUTION AND TRIBUTE TO DR. H. QUIGG FLETCHER

Dr. H. Quigg Fletcher, one of Chattanooga's leading physicians and surgeons, died at Erlanger Hospital, December 7, 1940, after a short illness.

Doctor Fletcher received his academic degree at the University of Georgia and his medical degree at Johns Hopkins University in Baltimore in 1909. He entered into the practice of medicine and surgery at Chat-

tanooga soon after his graduation at Johns Hopkins, and was very active in his chosen profession up until a few days before his death. He enjoyed a wide, successful practice for thirty-one years. He was a great believer in organized medicine. He was one of the profession's most active workers in the successful campaign for the enlargement of Erlanger Hospital, the hospital that he loved next to his own beautiful home on Missionary Ridge. He served several times as chief of staff of both Erlanger and T. C. Thompson Children's hospitals. He was a member of the Chattanooga and Hamilton County Medical Society, the Tennessee State Medical Association, a fellow of the American College of Surgeons, a member of the American Medical Association, and other scientific societies.

He was also a member of the Presbyterian Church, the Mountain City Club, the Chattanooga Rod and Gun Club, the Chickamauga Yacht Club, and many other civic and social organizations.

Doctor Fletcher was always striving to be a better doctor by visiting many clinics, both in the United States and abroad, for postgraduate work. He also served as captain in the Medical Corps of the United States Army during the World War.

The passing of Doctor Fletcher removes from Chattanooga and Hamilton County one of its best-loved citizens, physicians, gentlemen, and true friend.

Doctor Fletcher is survived by his wife, Mrs. Ruth Lamar Fletcher; a son, H. Quigg Fletcher, Jr., a medical student at Johns Hopkins; a brother, Van Fletcher, of Jackson, Georgia; and a nephew, Dr. Van Fletcher, Jr., of Chattanooga.

In recognition of his noble character and his great attributes, the Chattanooga and Hamilton County Medical Society extends to the family of Doctor Fletcher its deepest sympathy in their loss.

*Therefore Be It Resolved*, That a copy of these resolutions be sent to the family, a copy to the STATE MEDICAL JOURNAL, and a copy to be spread on the minutes of the

# Chattanooga and Hamilton County Medical Society.

E. S. BLAIR (*Chairman*)  
 L. P. BROOKS,  
 R. M. COLMORE,  
 F. B. STAPP,  
 CLEO CHASTAIN,  
 J. A. GENTRY.

Approved, December 12, 1940.

WILLIAM E. BRYAN, *President*.

J. MARSH FRERE, *Secretary*.

## A MEMORIAM TO DOCTOR C. J. CARMICHAEL

Another one of the Knox County Medical Society's most prominent members, Dr. Cawood J. Carmichael, has laid down a noble work and quietly passed into another field where there is no pain, no sickness, and no sorrow but a beautiful rest. Doctor Carmichael loved his God. He loved his home and he loved his noble profession. He contributed scientific papers to his medical society, which he loved and took great interest in. In his passing the doctors and his patients feel a great loss.

*Be It Resolved*, That the Knox County Medical Society extend its sympathy to his good Christian wife and a page of the minute book be made a memorial to Doctor Carmichael and a copy of said memorial be sent his wife and the STATE JOURNAL.

DR. R. G. WATERHOUSE, *President*.

DR. H. L. POPE, *Vice-President*.

DR. JESSE C. HILL, *Secretary*.

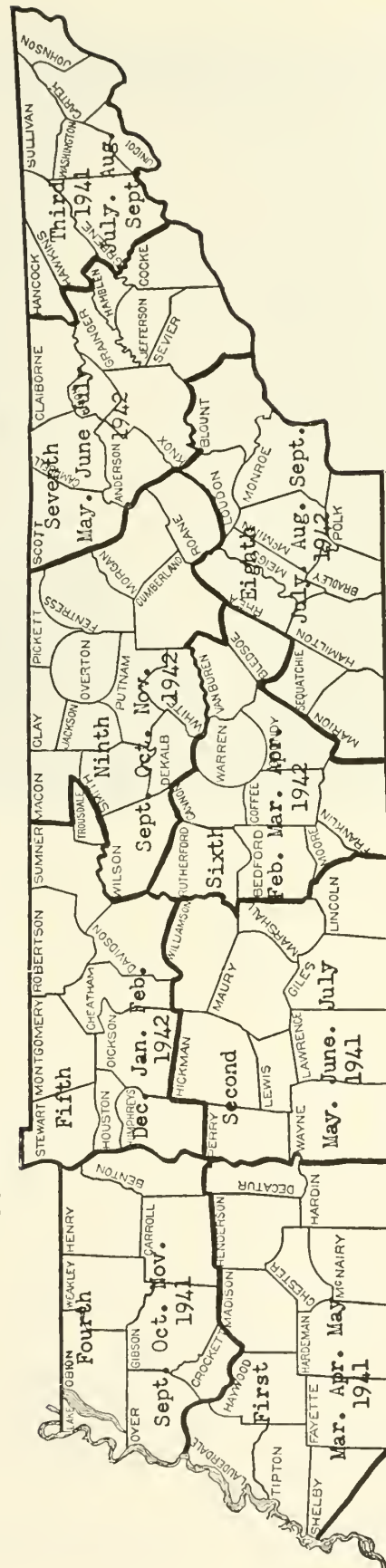
*Committee.*

## NEWS NOTES AND COMMENTS

The Postgraduate Committee for Internal Medicine, under the chairmanship of Dr. J. O. Manier, announces that from a number of applicants solicited by the committee on December 8, they appointed Dr. Robert Pratt McCombs from the medical faculty at the Jefferson College Medical School in Pennsylvania. Doctor McCombs will arrive in Nashville in February preparatory to opening instruction March 1.

The committee now contemplates following about the same geographical locations

OUTLINE OF POSTGRADUATE CIRCUITS, INTERNAL MEDICINE, 1941-1942







for the circuits and teaching centers as was followed in the program of pediatrics. The teaching centers for the first circuit are suggested for Covington, Jackson, Brownsville, Selmer, and Bolivar. Final establishment of teaching centers will depend upon the interest of the physicians and enrollments received from the counties of each district.

It is the opinion of the committee that Doctor McCombs is eminently well qualified to give instruction in internal medicine by reason of his past training and experience. Below will be found the circuit districts outlined on a map of Tennessee with dates shown so that physicians may know the approximate date the course will function in their section of the state. These dates are tentative and will depend upon any changes in road and weather conditions, together with major medical meetings which may occur in the state.

Following is the outline of the course which will be offered by Doctor McCombs:

(1) The Uses and Abuses of Sulfanilamide and Allied Drugs in the Practice of Medicine; (2) Disorders of the Heart; (3) *a* Cardiovascular-Renal Disease, *b* The Management of Heart Failure and Renal Failure; (4) Nutritional Diseases; (5) The Anemias and Blood Dyscrasias; (6) Diabetes Mellitus; (7) Chronic Nontuberculous Pulmonary Diseases; (8) Gastrointestinal Diseases; (9) Gastrointestinal Diseases; (10) Chronic Arthritis. The absence of two or three important subjects in the field of internal medicine from the outline is explained by advice of your committee to Doctor McCombs that such subjects as pneumonia, venereal diseases, and cancer are now being given prominence with instruction programs by every state health department in the nation, and since all subjects in the field of internal medicine could not be included in the ten weeks' course it was felt that such subjects as these could be safely omitted and thereby avoid a certain amount of duplication.

Inquiries from officers of county medical societies are welcomed and from any physicians desiring to know the possible dates for their county can be addressed to the Postgraduate Committee, Tennessee State Medical Association, Third National Bank Building, Nashville, Tennessee.

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#### THREE QUARTERS OF A CENTURY FOR PARKE, DAVIS & COMPANY

The year 1941 marks the diamond anniversary of the founding of Parke, Davis & Company, a firm which had its inception in a small drugstore in the city of Detroit, Michigan, and which, during the past seventy-five years, has become the world's largest makers of pharmaceutical and biological products.

From the very beginning, back in 1866, Parke, Davis & Company has engaged in research work with the object of making available to pharmacists and physicians medicinal preparations of the highest degree of accuracy.

In the early 70's pharmaceutical progress meant the discovery of new vegetable drugs. Energetic—and extensive—explora-

tions gave to the medical profession such valuable and widely used drugs as cascara and coca. Then, in 1879, came one of Parke-Davis' greatest contributions to pharmacy and medicine—the introduction of the first chemically standardized extract known to pharmacy. Desiccated thyroid gland, the first endocrine product supplied by the company, was introduced in 1893. One year later, Parke-Davis established the first commercial biological laboratory in the United States. In 1897 came the introduction of the first physiologically assayed and standardized extracts. And throughout these early years the fundamental Parke-Davis policy—precision in pharmaceutical manufacture—was crystallizing.

Since the turn of the century progress of the company has continued apace. An aggressive program of research has been zealously pursued, marked by the introduction of such important medicinal products as adrenalin, ventriculin, theelin, pitocin, pitressin, mapharsen, neo-silvol, antuitrin-S, meningococcus antitoxin, dilantin sodium, and many others. Diversified research activities cover the major phases of medical treatment—including the endocrine, biological, vitamin, and chemotherapeutic—and new discoveries are carefully evaluated through the company's extensive facilities for clinical investigation.

The company's home offices and research and manufacturing laboratories in Detroit occupy six city blocks on the Detroit river front, adjacent to the Detroit-Walkerville ferry, which connects the city of Detroit with the Province of Ontario, Canada.

A beautiful farm of 700 acres, known as Parkedale and located near Rochester, Michigan, about 300 miles from Detroit, is utilized for the production of antitoxins, serums and vaccines, and for the cultivation of medicinal plants.

In addition to its Detroit headquarters, branches and depots are maintained in important cities throughout the country.

Through the use of full pages in leading

national magazines Parke, Davis & Company are carrying on an advertising program that has attracted wide attention. As might be expected, their advertising is unique, ethical, distinctive. They make no direct attempt to sell their products to the public by means of this publicity. In a sincere effort to render a valuable service to the medical profession, they are running a striking series of messages based on the "See Your Doctor" theme, and physicians throughout the country are constantly experiencing evidences of the results of this broad educational program.

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#### ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter prize award of \$300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held at Boston, Massachusetts, May 26, 27, and 28, providing essays of sufficient merit are presented in competition.

Those interested may write for full particulars to Dr. W. B. Mosser, Corresponding Secretary, Kane, Pennsylvania.

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The 108th annual meeting of the Tennessee State Medical Association will be held at the Noel Hotel, Nashville, April 8, 9, 10. The program committee has been working for some time and at an early date will make its announcements. A number of commercial exhibits have been secured and the scientific exhibits will be better than ever. Several pictures have been secured to be shown in the projection room on the mezzanine floor and these pictures alone will prove worth while to every member of the Association.

So make your plans to attend the sessions of your Association.



# WOMAN'S AUXILIARY

President-----Mrs. W. T. Braun  
Memphis

President-elect-----Mrs. W. W. Potter  
Concord

Press and Publicity-----Mrs. H. B. Bracken  
Nashville

## WHY READ THE BULLETIN?

The *Bulletin* is our official organ, and it is through this *Bulletin* that the news and activities of the medical auxiliaries are disseminated. Everyone recognizes this truth—that progress in any organization is dependent on facts, observations and conclusions communicated by one individual to another and recorded for future generations, each generation building on the foundation work of former generations. It is through the *Bulletin* that new ideas and new knowledge are transmitted to the various members of our Auxiliaries. The immediate goal of our Auxiliary is to increase the circulation of the *Bulletin* to include at least one-fourth of our Auxiliary membership. Our quota is ninety-six and to date we have fifty-eight. Let's start the new year off by going right on over the top and get this remaining thirty-eight. Won't you help by doing your part?

MRS. H. E. CHRISTENBERRY,  
*Circulation Manager.*  
Highland Drive, Knoxville, Tennessee.

## LINCOLN COUNTY

The Lincoln County Medical Auxiliary met December 4, 1940, with Mrs. C. L. Goodrich of Fayetteville. Each member answered roll call with a suggestion for the making of Christmas decorations. Mrs. W. F. Cannon read a Christmas story written by one of the Auxiliary's own members, Mrs. Mabel Rhodes. Members brought Christmas packages to the Christmas tree for the children of the Lincoln County Poor Farm.

The next meeting is to be held January 8 in the home of Mrs. R. E. McCown of Fayetteville.

## DAVIDSON COUNTY

Woman's Auxiliary to Nashville Academy of Medicine and Davidson County Medical Society met January 3 at the home of Mrs. Hearn Bradley.

Luncheon was served, followed by a business session, with Mrs. William R. Cate, vice-president, in charge. Plans were made for the annual birthday party of the Auxiliary, to be given February 5, in the form of a dinner at Belle Meade Country Club.

Mrs. F. H. Alley was welcomed as a new member. Mrs. P. G. Morrissey, Jr., and Mrs. James Goldsberry were guests. Hostesses were: Mrs. Oscar Nelson, Mrs. Eugene Orr, Mrs. Travis Martin, Mrs. Paul Morrissey, Mrs. T. F. Frist, Mrs. Geo. Carpenter, Mrs. W. O. Tirrill, Jr., Mrs. David Hailey, Mrs. Theo Morford, and Mrs. A. L. White.

## MEDICAL SOCIETIES

*Bradley County:*

The Bradley County Medical Association met on December 10, 1940, at the Cherokee Hotel, with Dr. T. J. Manson of Chattanooga speaking on "Pneumonia and the Pneumonia Control Program."

The following officers were elected for 1941: Dr. William A. Garrott, President; Dr. Madison S. Trew hitt, Vice-President; Dr. H. H. Hudson, Secretary-Treasurer.

(Signed) H. H. HUDSON, M.D.,  
*Secretary-Treasurer.*

*Davidson County:*

The annual banquet was held at Belle Meade Country Club on Tuesday evening, January 7.

The annual election was held on December 10 with the following results: Dr. N. S. Shofner, President; Dr. J. P. Gilbert, Vice-President; Dr. Hamilton V. Gayden, Secretary.

Delegates to the Tennessee State Convention:

George Carpenter, M.D.; alternate, D.  
W. Smith, M.D.



O. N. Bryan, M.D.; alternate, Charles C. Trabue, M.D.

Carl S. McMurray, M.D.; alternate, James A. Kirtley, Jr., M.D.

J. J. Ashby, M.D.; alternate, Thomas F. Frist, M.D.

Sam Fentress, M.D.; alternate, R. A. Daniel, Jr., M.D.

J. C. Pennington, M.D.; alternate, Joe Strayhorn, M.D.

The Academy meets every Tuesday night on the sixth floor of the Doctors Building. Visiting doctors are invited.

#### *Knox County:*

On December 17 the election of officers for 1941 was held. After twenty-three years of service as secretary, Dr. Jesse Hill was elected President; Dr. John R. Smoot, Vice-President; Dr. Robt. B. Wood, Secretary-Treasurer. Dr. R. G. Waterhouse, the outgoing president, was elected to the Judicial Council.

At the meeting on January 7, Doctor Waterhouse delivered his "Presidential Address" and the 1941 officers were installed. The closing paragraph of Doctor Hill's letter of January 7 is typical of the writer and should be passed on to the profession of the state.

Doctor Hill writes: "Let's be charitable and kind with one another always. It always pays sooner or later. This is my last letter as secretary, and let me repeat 'all doctors are good at heart.'"

#### *Washington, Carter, Unicoi Counties:*

On January 2, 1941, at 7:00 P.M., a joint meeting of the Washington-Carter-Unicoi County Medical Society was held in the John Sevier Hotel in Johnson City, Tennessee. The meeting was attended by thirty-eight physicians from these three counties. It was unanimously agreed to amalgamate the Washington County Medical Society, the Carter County Medical Society and the Unicoi County Medical Society into one society to be known as the Washington-Carter-Unicoi County Medical Society.

The officers of the newly-organized society are: Dr. Walter D. Hankins, Johnson

City, President; Dr. E. H. Caudill, Elizabethton, Vice-President for Carter County; Dr. H. L. Monroe, Erwin, Vice-President for Unicoi County; Dr. H. B. Cupp, Mountain Home, Secretary-Treasurer.

The guest speaker for the meeting was Dr. C. F. N. Schram of Kingsport, who read an interesting paper on "Industrial Medicine."

We voted to have ten meetings during 1941, one each month except July and August. The meetings are to be held the first Thursday in each month at 7:00 P.M.

(Signed) H. B. CUPP, M.D.,  
*Secretary-Treasurer.*

## OTHER MEDICAL SOCIETIES

### ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, NOVEMBER 1, 1940

1. Case Report: "Congenital Obstruction at the Bladder Neck," by Dr. Burnett Wright.

This case was discussed by Dr. E. H. Barksdale.

2. "Pioneer Medicine in Nashville," by Dr. Owen H. Wilson.

Doctor Wilson showed the diploma granted by the Medical Department of Transylvania University to John Robertson Wilson, grandfather of Drs. A. W. Harris and O. H. Wilson. It was dated March 25, 1825, and was signed by such pioneer educators as Daniel Drake, B. W. Dudley, and other contemporaries of Ephraim McDowell.

Also found in the attic of Dr. J. R. Wilson's old home, now the Nashville airport, was his daybook for 1831, recording the usual fees for that period: obstetrics, five dollars; extraction of teeth, fifty cents; delivery of twins, fracture of the femur, and gonorrhea, ten dollars; a successful operation for intussusception, November 21, 1831, five dollars.

This paper was discussed by Drs. Beverly Douglas and Barney Brooks.

3. "The Excystation of Endamoeba Histolytica in Media Free from Bacteria," by Drs. T. L. Snyder and H. E. Meloney.

The dysentery amoeba, *endamoeba histolytica*, under ordinary conditions requires the presence of living bacteria, both for multiplication and for emergence from the cyst stage. It has been possible to produce excystation, but not multiplication by removing the oxygen from sterile culture media. This indicates that living bacteria apparently produce similar anaerobic conditions stimulating excystation. A motion picture was shown demonstrating excystation with and without the presence of bacteria.

This paper was discussed by Drs. W. S. Leathers, Edna Tompkins, J. C. Peterson, and Roy C. Avery.

## COMING MEETINGS

American Medical Association Session, Cleveland, June 2-6, 1941. Dr. Olin West, Secretary, 535 North Dearborn Street, Chicago, Illinois.

Mid-South Postgraduate Medical Assembly, Memphis, February 11-14, 1941. Dr. A. F. Cooper, Secretary, Goodwyn Institute Building, Memphis, Tennessee.

Southern Medical Association, Thirty-Fifth Annual Meeting, St. Louis, Missouri, November 11-14, 1941.

Tennessee State Medical Association, Nashville, April 8-10, 1941. Dr. H. H. Shoulders, Secretary.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

The Use of Analgesics in Labor. T. L. Montgomery. *Anesthesia and Analgesia*, November-December, 1940.

The author believes that the anesthetic agents improperly and excessively used is an important factor in obstetric mortality. He reports in detail three fatalities in mothers who had frequent and excessive doses of barbiturates and scopolamine followed by nitrous oxide. There occurred sudden collapse, cyanosis, and death.

These agents have a depressing effect on the fetus, causing partial to complete asphyxia. When nitrous oxide is used in labor fifteen per cent of oxygen is required to maintain sufficient oxygen to fetus. Cyclopropane is more suitable in labor, but

cannot be given intermittently due to the danger of explosion.

Nitrous oxide can be used with fairly good results in a normal spontaneous delivery. The author prefers ether when operative procedures are indicated. The patients should be evaluated before any perineal repairs are instituted. The anesthetic should be taken off at the third stage, as many deaths occur at this time. The obstetrician should not promise the patient total amnesia in the early stages of labor, as this may require excessive and frequent use of agents which may have an accumulative effect later.

### FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Treatment of Undulant Fever by Artificial Fever Therapy. Report of Case, Walter J. Zeiter, M.D. *Cleveland Clinic Quarterly*, 4: 4-309, October, 1937.

The patient, a married farmer, fifty-four years of age, was admitted to the Cleveland Clinic on April 30, 1927. His complaint was of pain in the scrotum with marked edema, pain in the left hip, right shoulder and the hands, weakness and periods of diaphoresis.

Past history: About a year previous to examination—in April, 1936—the patient had pains in various joints. These were similar to those he was experiencing at the time of our examination and he stated that such pains had occurred nearly every spring for the preceding ten years. He also had noticed a swelling of the right testicle and weakness associated with loss of weight had developed. At intervals he suffered from severe sweats. The right testicle continued to increase in size and a diagnosis of tuberculosis was made. A right orchidectomy was performed on November 5, 1936. Following this the patient had a draining sinus for two and one-half months. His general condition did not improve, and a few weeks before coming to the clinic the left testicle became painful and enlarged.

Physical examination revealed no apparent abnormalities except for absence of the right testicle. The left epididymis was thickened and tender. The prostate was slightly enlarged, very firm and smooth, and the left lobe was somewhat tender. The right hand showed changes characteristic of rheumatoid arthritis.

Roentgen examination of the chest revealed an old right basal fibrosis. The spine showed an old left lumbar scoliosis with rotation and extensive osteoarthritis.

Laboratory findings: Examination of the blood showed 4,550,000 red cells per cubic centimeter, 5,500 white cells per cubic centimeter, and ninety per cent hemoglobin. The differential count was seventy per cent, polymorphonuclear neutrophils; 1,112 milligrams per 100 cubic centimeters and of



the blood urea forty-two milligrams per 100 cubic centimeters. The Wassermann and Kahn reactions of the blood were negative. Urinalysis gave normal findings. The sediment of the urine was negative for tubercle bacilli. The sedimentation rate was increased to 1.08 millimeters per minute. The agglutination test for *Brucella abortus* was positive in a dilution of 1:160.

On further questioning of the patient, it was learned that abortions had occurred quite frequently among his cattle, so in all probability the animals were a source of infection. After an evaluation of the history, clinical, and laboratory findings, a diagnosis of undulant fever was made and it was decided to give the patient artificial fever therapy.

The patient received three artificial fever treatments. The temperature during the first treatment ranged between 104 degrees Fahrenheit to 105 degrees Fahrenheit for five hours. The second and third treatments were given between 105 degrees Fahrenheit and 106 degrees Fahrenheit for five hours each. The fevers were produced by electromagnetic induction.

Four months after the last fever treatment, the patient's general physical condition had improved greatly. His temperature has remained normal and he has gained about fifteen pounds in weight. Some of the symptoms of arthritis still persist in the joints.

Comment: Another patient has just completed three artificial fever therapy treatments for undulant fever, but it is too early to make any statements as to the final results. However, the results obtained thus far in a limited number of patients indicate that this form of therapy is of definite value in the treatment of patients with undulant fever and it certainly should be used until more data are available.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Modern Trends in the Artificial Termination of Pregnancy and Labor. Frederick C. Irving. *American Journal of Obstetrics and Gynecology*, 621: 625, October, 1940.

At the beginning of a note appended to *The London Practice of Midwifery*, published in 1826, the editor of the American edition says in his introduction:

"The facts presented in the following tabular views may be useful as having a tendency to increase the confidence of the young practitioner in the ample resources of nature, and may render him less disposed to have recourse to instruments and artificial assistance, a fault, however, not confined to the junior members of the profession."

In Table I are abstracted data which represented the hazards of pregnancy and childbirth over a

century ago, long before the days of antiseptics and asepsis, when doctors washed their hands after making vaginal examinations or conducting deliveries, but not before. Twenty years were to elapse before the discovery of general anesthesia, the clinical thermometer, urinalysis, the sphygmomanometer, pelvic mensuration, and prenatal care were far in the future. The second part of the same table shows the recent maternal mortality rates of three large American cities, which in two instances are the same as those from which were derived the death rates of a hundred years ago. While it is freely admitted that the vital statistics of those days may not be entirely accurate because of the difficulty which may have existed then in collecting such information, what amazes us is that modern results in obstetrics are not incomparably better. Undoubtedly certain changes in economic, social, and racial factors have played their part, but careful investigation of each death in these three cities by committees appointed for the purpose shows, in a disquieting number of instances, that most of the catastrophes have resulted from interference with "the ample resources of nature" in the processes of pregnancy and parturition. Among such abuses are the indiscriminate resort to Caesarean section and, in many cases, the unjustified employment of pelvic operative delivery. While these investigations indicate no ill results in the routine induction of labor which is being practiced by some obstetricians, usually by artificial rupture of the membranes presumably at or near full term, this procedure is sufficiently radical to warrant some comment.

In 1937 and 1938, 4,298 Caesarean sections were performed in Massachusetts. During this time there were 128,100 births, which indicates that the doctors of this state believed it necessary once in every twenty-nine pregnancies to perform a serious abdominal operation to complete the process of reproduction. It is extremely unlikely that the structural fabric of the women living in this commonwealth has changed much, except greatly for the better, from that of 100 years ago, when Caesarean sections were performed only in the rarest instances as a last resort. Behind the appalling frequency of this operation lies the fear of the doctor insufficiently skilled in the art of pelvic delivery and thus without the confidence that such skill affords, that in no other way when even minor complications arise can he be sure of securing living infants for his patients. If almost every Caesarean section guaranteed that the baby would be born alive, such a belief might have some basis in reality, but such is not the case. Four thousand, two hundred ninety-eight Caesarean sections produced 379 dead babies; an infantile death rate of 8.8 per cent, which agrees closely with a rate of 8.5 per cent derived from a study of 3,037 Caesarean sections reported by eleven American authors and collected in 1937. When Caesarean section is performed for the sole purpose of obtaining a living infant, it does not compete with normal



delivery and low forceps, for in 12,371 delivered thus through the pelvis in our clinic the total fetal mortality, including stillbirths and neonatal deaths, was only 3.4 per cent.

Internal podalic version has a distinct place in obstetrics, but like all other obstetric operations, only on definite indications. Chief among these are prolapse of the cord after full dilatation of the cervix. At the Boston Lying-in Hospital, it was employed in only five-tenths per cent of 20,364 deliveries.

In our clinic, the policy is to deliver patients by low forceps after the scalp is showing: (1) if the fetal heart rate shows significant variations or (2) if there has been no progress for two hours. The incidence of this operation varies from twenty-five to thirty per cent; the fetal mortality of viable infants delivered normally is 3.7 per cent and of those delivered by low forceps 2.6 per cent.

The characteristic haste of some American accoucheurs to terminate labor is shown not only by their frequent resort to Caesarean section, but also by the readiness with which they effect operative delivery through an undilated cervix.

The induction of labor toward the end of pregnancy, when performed for a distinct indication, is a most valuable procedure, and in pre-eclampsia it is a salutary measure for both mother and infant. Of late years, however, "delivery by appointment," usually by rupture of the membranes, for the convenience of the patient, and of the doctor, has come into vogue with certain obstetricians.

There is yet no evidence, when the cervix is effaced and there is some dilatation of the cervix and in the absence of cephalopelvic disproportion or of an abnormal presentation, that in the hands of a well-trained obstetrician such a procedure is often productive of harm. On the other hand, should prolapse of the cord occur, or puerperal infection set in, the attendant should be willing to accept the blame for an accident which probably would not have happened had he not interfered with a normal pregnancy.

The general practitioner, if not the obstetric specialist, may derive some comfort from the incontrovertible fact that childbirth, if left alone, is usually a normal process. In sixty years 73,532 women have been delivered in the poorer districts of Boston by third- and fourth-year students of Harvard Medical School with the loss of eighty-two, a death rate of 1.1 per thousand. Up to the establishment of the pregnancy clinic in 1913 the rate was 1.6 per thousand; since then it has been five-tenths per thousand. During the last six years 5,033 women have been delivered with no deaths. All abnormal cases are sent into the hospital; no operations are performed on the district except low forceps and multiparous breech extractions. Possibly such results smack of midwifery rather than of obstetrics, but be that as it may, it is not likely that the results would have been as good if one in twenty-nine, or 2,604 others had been delivered by

"prophylactic" version or forceps, or if the membranes had been ruptured indiscriminately simply because the patients appeared to be at term.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Phenol Burns of Both Eyes with General Sequelae: Comment on the Therapy of Caustic Burns of the Eyes. A. Winkler. *Archives of Ophthalmology*, November, 1940.

A mixture of phenol containing thirty-five per cent of cresol and ten per cent of xylol splashed into both eyes of a man thirty-three. Caustic burns of the third, the necrotizing, degree of the eyes, face, and chest followed. Chemosis, clouding of the corneas, petechial hemorrhages in the conjunctiva and iritis resulted; vision was reduced to perception of motion of the hand. Transient diffuse nephritis and severe but transient anemia developed. This was the result of the toxic action of the phenol absorbed by the organism. Conservative treatment was administered and vision of 5/25 of the normal was regained in the right eye and in the left eye of 5/7 of the normal. It consisted in the removal of every trace of the caustic burns, irrigation of the eyes with saline solution every hour or two, applications of an ointment containing vitamin A (vogan) and one containing ethylmorphine hydrochloride and instillation of mild mydriatics, such as homatropine and scopolamine. No bandage was applied. This therapy has been used at the ophthalmic clinic of the University of Halle for 215 patients during the last five years.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

Treatment of Radiation Reactions Following 200 Kilovolts Therapy. Z. A. Johnston. *Radiology*, Vol. 35, No. 2, p. 192, August, 1940.

A variety of aftereffects of 200 kilovolts radiation have been reported. Some of these are radiation sickness, blood changes, skin reactions of all types from a faint erythema to an ulceration, through bronzing, telangiectasis, or fibrosis. Later there are changes in underlying organs, there may be diarrhea or bleeding from the bowel due to changes in the intestinal mucosa, ulceration and fibrosis of the trachea have been reported, as have an increased tendency to fracture of a bone which has been heavily irradiated. Cataracts have also developed following heavy irradiation over the eye.

The term "radiation sickness" covers a syndrome of symptoms characterized by a toxemia. There may be a nausea, vomiting, loss of appetite, and general weakness. One-half of the patients treated

with heavy doses of X-ray are affected to some extent. It occurs more frequently when large areas over the trunk of the body are treated. There are various disturbances in the metabolic processes of the patient caused by the irradiation, some of which are briefly reviewed. Some of the chemical or biological products that have been used and in which good results have been reported are: colsil, a cholesterol preparation, the use of sodium chloride, calcium chloride, calcium lactate, morphine, nembutal, liver extract, and vitamin B<sub>1</sub> in large doses. The author prefers vitamin B in cases showing a marked reaction plus nembutal.

In order to give an adequate dose to underlying structures, it is unfortunately quite often necessary to give a dose of X-ray that will cause definite changes in the skin. The patient should be warned that a reaction will likely occur and that no medication except that prescribed should be applied. They should especially be warned to avoid adhesive plasters, mustard plasters, musteroles, iodine, heat, or any medication for rheumatism. An ointment or lotion containing zinc oxide or calomine is useful when the reaction occurs. When ulceration inadvertently occurs, the whole leaf of Aloe vera or some preparation of this is useful for relieving pain and burning.

Late skin reactions consist of telangiectasis or fibrosis. If a few dilated blood vessels are present on an exposed part of the body, they can be removed by electrocoagulation. When the involved area is large, surgical removal and a skin graft may be necessary. A recent report of the use of haliver oil in skin that is dry and shows other signs of permanent changes following X-ray treatment indicated very good results had been obtained.

**ABSTRACTOR'S NOTE.**—With the widespread use of radiation therapy, the general man should be more familiar with the various types of changes that may follow roentgen therapy. While very undesirable results may occasionally follow irradiation therapy because the individual is unusually sensitive or on account of some accidental overdose, the general man should be careful not to apply the term "burn" to every reaction. Most of them are not burns. The general man should not hastily ascribe to irradiation every undesirable symptom that may follow irradiation. He should remember that other conditions may arise simultaneously in a given case which may be causing the symptoms. When symptoms do follow irradiation, they should be treated conservatively.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
188 South Bellevue, Methodist Hospital  
Doctors Building, Memphis

The Healing of Wounds. T. McKean Downs. Surgical Clinics of North America, 20: 1859, December, 1940.

The four factors considered in the healing of wounds are the patient, the wound itself, the suture

material, and the technique of using it. It is not uncommon for wounds to break down in cases when digestive juices are free in the abdominal cavity. Also cachexia in a patient is an important factor, but in some no apparent cause can be found. Post-operative blood transfusions to maintain a normal serum protein level and the administration of vitamin C lessens the incidence of wound disruption.

With regard to the wound itself close approximation of the tissues without tension should be obtained with a minimal amount of dead or devitalized tissue. The cross cutting of muscles or their tendinous fibers or fasciae is to be avoided whenever possible. Bleeding should be thoroughly checked to prevent formation of a hematoma and bleeders should be tied with as little excess tissue as possible. Strong antiseptics should not come in contact with the tissues, but rather reliance be placed in mechanical debridement.

Catgut suture material is most often used for buried sutures, but it is recommended that the smaller sizes—0 to 0000—be used rather than the larger sizes. Catgut is also preferable in the presence of infection. Silk, linen, and stainless steel wire all cause no reaction in the tissues that is found when catgut is used. These nonabsorbable sutures are becoming more frequently used in clean cases.

The technique of suturing is most important. Suturing too tightly results in cutting of the tissues until the tension is relieved. Sutures placed too close together cut off or impair the blood supply to that area of the wound margin. Tight suturing in herniorrhaphies is an important reason for early recurrences. In the tying of knots when using silk or linen two knots will hold, but three should always be tied when using catgut. It is a good habit to tie three knots in all materials, for even in silk knots may slip if under any strain. A square knot has been recommended in the past for sutures, but the author prefers the granny because it becomes untied much less easily.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Hypertension and the Surgical Kidney. Wm. F. Braasch, M.D.; Waltman Walters, M.D.; Howard J. Hammer, M.D. (Fellow in Urology, the Mayo Foundation). Rochester, Minnesota.

In 1934, Goldblatt reported that partial constriction of the renal arteries of dogs was followed by a rise in blood pressure. Other investigators have since made similar observations.

A large series of cases in which there were renal lesions which had been subjected to surgery were investigated for the following: the incidence of hypertension in relation to the different types of renal lesions, the postoperative course of the blood pressure in these cases, the relation of hypertension



to renal stasis, renal function, and bilateral renal involvement.

The incidence of hypertension in a group of 1,684 patients subjected to renal surgery was no higher than it was in a group of patients taken at random.

Unilateral atrophic pyelonephritis, with hypertension, is the principal renal lesion amenable to surgery, with relief of the elevated blood pressure.

Of forty-three patients operated for atrophic pyelonephritis, twenty, or 46.5 per cent, had hypertension. Of 793 cases operated for renal stone, 161, or 20.3 per cent, had hypertension. The stone cases with infection had 22.5 per cent with hypertension and noninfected cases, only 5.7 per cent, had elevated blood pressure. Fourteen per cent of the cases operated for hydronephrosis had hypertension. Pyelectasis was not a factor in causing blood pressure elevation.

One hundred thirty-seven cases were operated

for renal adenocarcinoma, 27.7 per cent of which had hypertension; 63.5 per cent of this group were in the sixth decade of life or older. The age factor is of importance in any group of hypertension cases.

In most cases of hypertension, no evidence of reduced renal function was found, and in many cases with a low renal function no hypertension was present. Many cases with bilateral renal tuberculosis, bilateral hydronephrosis, and bilateral calculi had a normal blood pressure.

One hundred ninety-eight cases with hypertension subjected to surgery, the blood pressure became normal after operation in sixty-five and remained normal for a year or more.

The reduction in pressure may exist for a year and then the hypertension return. To determine whether recovery is permanent, it is necessary to follow these cases for more than a year.

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## ADVANCES IN THE TREATMENT OF CANCER WITH RADIATION\*

CHARLES L. MARTIN, E.E., M.D., F.A.C.R., Dallas, Texas

Although cancer is still one of our most important causes of death, physicians are slow to acquaint themselves with the newer methods of treatment, and I have observed with much regret the tendency of many to depend entirely on the scalpel when other methods have much to offer. The work of the outstanding cancer centers have proven the value of cooperative effort, and it is no longer considered proper to ask for the advice of the radiologist only after all other methods of treatment have failed.

In the Baylor University Tumor Clinic it has been found that about eighty per cent of the patients applying for treatment do best when handled in part or completely by radiation. Let me hasten to state that I am a strong advocate of good surgery where it is indicated, but we have found that a large amount of the operative work thought necessary ten years ago can now be eliminated where good radiation therapy is available.

In an effort to emphasize the role of increasing importance played by this relatively new specialty, I will attempt to point out some of the high points in its development, using cases from our own practice as illustrative material. Roentgen rays were first used successfully as a therapeutic agent in the treatment of cancer of the

skin, and it may interest some of you to know that Pusey<sup>1</sup> actually cured patients with proven squamous cell carcinoma of the lip, using nothing but low voltage X-rays more than thirty years ago. He had no way of measuring accurately, and was bold enough to give amounts of radiation large enough to kill all of the malignant cells. When measuring devices were perfected, dermatologists were frightened by the large amounts needed to cure squamous cell cancer and abandoned the method, but a few of the pioneer radiologists improved the method, and it is still used routinely for the treatment of skin carcinomas of moderate size in our clinic. It produces an excellent cosmetic result without hospitalization and is relatively economical. Some of our surgical confreres condemn the technique because they have seen failures result from its use in the hands of those who lack the courage or the training to apply it efficiently, but this condemnation should not be directed at the method.

When actual cures of skin cancer with low voltage X-rays were first observed, excitement reached a high pitch, and the new treatment was applied indiscriminately to all sorts of malignant tumors with very disappointing results. Physicists soon pointed out the necessity of using higher voltages and metal filters in order that sizeable doses might be delivered to the internal structures without the production of too

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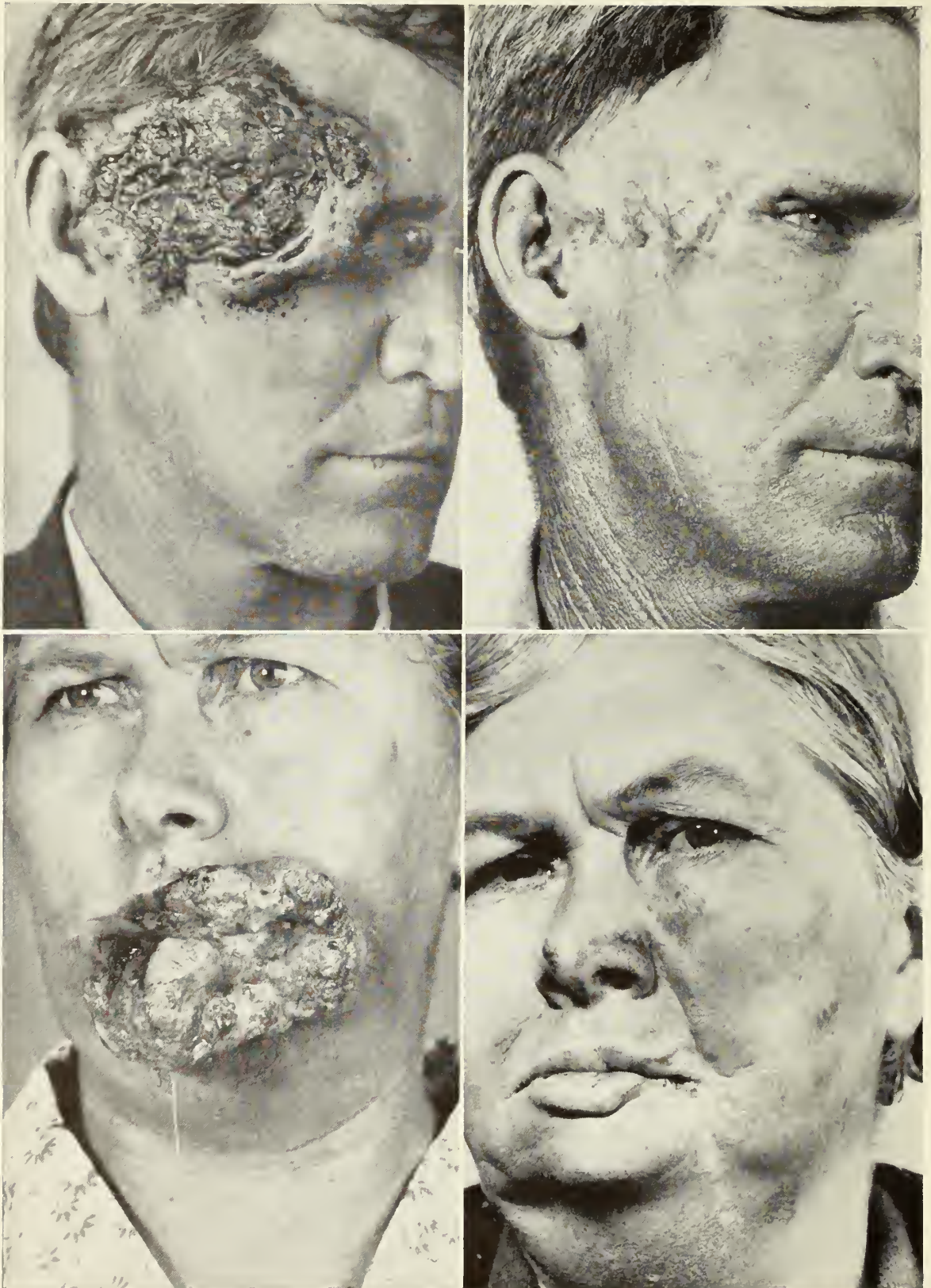


Fig. 1. Upper photographs show a large squamous cell carcinoma, grade II, of the face before and four years and three months after treatment with modified Coutard therapy. Lower photographs show a large squamous cell carcinoma, grade I, of the lip, corner of mouth, and cheek before and six months after treatment with a combination of Coutard therapy and implanted radium needles. This patient has been well for three years and eight months.



much skin damage. Soon after the World War the Germans flooded this country with articles, in which it was claimed that internal cancer could be cured with a few doses of rays generated at 200,000 volts. Many American radiologists thought these claims exaggerated, but several years elapsed before the medical profession learned that the more powerful machines seldom produced cures of internal malignant lesions. Following this period of disappointment surgeons voiced their unflattering opinions of radiation therapy quite freely.

The deep therapy method, as it was called at that time, was finally given a real field of usefulness through the work of the French radiologist, Coutard. He was invited to this country and presented his work before the American Roentgen Ray Society in 1932.<sup>2</sup> Regaud and his associates in Paris had previously shown that a dose of deep X-ray large enough to destroy a malignant growth would also destroy the surrounding normal tissues when given all at one time. However, when this dose was broken up into a number of fractions given carefully on successive days, the malignant cells were still destroyed, while the normal cells were allowed to recover. Coutard demonstrated the application of this principle to the treatment of cancer of the pharynx and was able to demonstrate a series of actual cures. The treatment was time-consuming and the reactions were severe, but the results obtained were very encouraging and a new field of roentgen therapy was opened up. It is now my opinion that all patients with cancer of the pharynx and most of those with cancer of the larynx are entitled to a trial of this type of therapy. The patient with carcinoma of a vocal cord who has his voice restored by radiation and avoids the lifelong use of a tracheotomy tube has much to be thankful for. Surgery has nothing to offer in the pharynx, but may be used to advantage in certain laryngeal cases.

Most carcinomas of the pharynx are very radiosensitive and the primary lesions are handled with relative ease. However, they metastasize rapidly and many of them pro-

duce cervical adenopathy before the presence of the primary lesion is recognized. In about one-third of the cases, direct extension into the cranial vault creates the clinical picture of brain tumor through pressure on the cranial nerves and eventually metastatic lesions occur in the chest and abdomen in all uncured cases. It has been my experience that the mediastinum, neck and base of the skull must be irradiated early in the disease if a cure is to be produced.<sup>3</sup>

Soon after Coutard demonstrated the divided dose method for treating cancer of the throat, American radiologists began to apply it to other parts of the body. In 1935, my father and I described a modified Coutard technic,<sup>4</sup> with which large epidermoid carcinomas of the face could be cured with a series of treatments given in a period of two weeks. Other modifications have been devised for the treatment of many internal lesions such as cancer of the bladder, prostate, ovary, kidney, uterus, thyroid, lung, etc., but only palliation has been obtained in most of these deep-seated lesions when X-rays alone are used. Marked improvement lasting from one to three years has been observed following the use of this technic in certain cases of carcinoma of the oesophagus and ovary, Ewing's tumor of bone and metastatic lesions in bone from cancer of the breast. In this latter lesion striking results are obtained when the patient also receives an X-ray castration. In a few cases, the multiple dose method has caused large, rapidly-growing tumors of the fundus of the stomach to completely disappear, but it seems likely that these lesions are lymphosarcomas rather than carcinomas. Medulloblastomas of the brain have also shown complete regressions and metastases from carcinoma of the testicle have been permanently eradicated. In some of the conditions in which only palliation can be obtained such as cancer of the kidney and some of the breast tumors, the best results are obtained by a combination of radiation and surgery.

For a good many years after radium was discovered its principal field of usefulness lay in the treatment of cancer of the uterine



Fig. 2. Upper photographs show a large squamous cell carcinoma, grade I, of the lip before and one year after treatment with endotherm knife and radium needles. It has remained well for four years and nine months. The lower photographs show a large squamous cell carcinoma, grade II, of the cheek and alveolar process before and six months after treatment with radium needles. It has remained well for seven years and seven months.



cervix. This disease, which remains within the true pelvis for a long period after symptoms appear, is well suited for radium therapy and as the technic of application has been perfected, the percentage of cures has shown a steady increase. The addition of divided dose X-ray therapy has done much to improve the results, and whereas only nineteen per cent of all cases treated were cured in the beginning, approximately thirty per cent can now be cured with radiation.<sup>5</sup> Since this procedure is accompanied by practically no mortality and almost always produces improvement, even though a complete cure is not possible, it has completely replaced surgery in our clinic, and the Wertheim operation is no longer used in our community. Much can be done for advanced cases by stopping the hemorrhage, lessening the discharge, relieving pain, and treating such troublesome complications as urinary infection and strictured ureters.

Cancer of the fundus of the uterus has been considered a surgical problem for many years, but Healy and Brown<sup>6</sup> have recently emphasized the value of radium in this condition. They have materially improved their results by using it as an aid to or as a substitute for hysterectomy, but have admitted its lack of usefulness in uteri of large size or irregular shape. In 1940, we published a description<sup>7</sup> of a radium applicator especially designed for uteri of these types, and it is our opinion that carcinoma of the fundus should be treated first with radium. If any of the disease remains in the uterus and the patient is a fair risk, a hysterectomy is done about two months later as a secondary procedure.

Radium is capable of killing only those cancer cells located near the source of radiant energy, and for that reason produced few good results in the earlier years of its use when only external applicators were available. The advent of interstitial therapy administered with implanted gold and platinum radon seeds devised by Failla<sup>8</sup> in 1926 gave radium a new field of usefulness. Since we found it difficult to obtain radon implants in our part of the country, a search was started for a worthy substitute about ten years ago, and in 1932<sup>9, 10</sup> a weak

radium needle was described which has been used continuously since that time for all of our interstitial work. This needle contains a relatively small amount of radium and is heavily filtered. It is a modification of a type used extensively in France and England. By utilizing several sizes, proper patterns can be placed in tumors in almost any portion of the body. The needles remain in the tissues for long periods, usually seven or eight days, and for that reason must be stitched in position. The technic of implantation is rather tedious and requires some experience, but the early results obtained in cancer of the lip, cheek, tongue, and soft palate<sup>11</sup> were good enough to justify the development of the method. Our first work was done on a more or less empirical basis, but charts recently compiled with the aid of Quimby make it possible to accurately compute the exact dosage delivered in the tissues.<sup>12</sup> Interstitial radiation produces the minimum amount of deformity and scarring and very little plastic surgery need be done after the healing of most of the lesions treated in and about the mouth. The needles have also been used to advantage in certain cases of carcinoma of the vagina, extensive lesions found in the cervical stump after hysterectomy and squamous cell carcinoma of the anus. Implantations in malignant tumors of the bladder done at the time of operation have produced some cures in early cases and long remissions in some of the prostatic carcinomas have been obtained in the same manner.

Although primary carcinomas of the lip, mouth, and throat have responded well to radiation therapy, the number of five-year cures has been relatively small because of our inability to cure metastases in the cervical lymph nodes. For more than thirty years block dissection has been recognized as the proper treatment for this complication, but a careful statistical study has shown that less than ten per cent of the patients coming into the average cancer clinic with metastatic nodes in the neck can be cured by surgery. About seven years ago we attempted to treat these nodes with implanted radium needles and some regressions were obtained. Most of these regres-





Fig. 3. The first photograph shows a large squamous cell carcinoma, grade III, of the lower lip with two large metastatic submental lymph nodes. The middle photograph was made four months after treatment with a combined X-ray and radium needle technic. There is now a large fixed submaxillary metastasis on the right side. This gland was treated in the same manner and the last photograph shows complete healing with no evidence of carcinoma two years after the first treatment was given.

sions were not permanent and it became evident that the dosage was too small. A plan was finally devised with which a massive total dose could be administered to the neck safely by combining the divided dose X-ray technic and implanted radium needles.<sup>13</sup> In a series of thirty-nine cases treated in this way twenty-four are alive and free of palpable nodes for periods of

one year or more. Eight of these patients have remained symptom free for four or more years. Many of them were considered inoperable and immediate improvement was observed in all but three. This new technic, which may be used even when the involvement is bilateral, has made the outlook much brighter for patients with cancer of the head and neck, and I now feel that



Fig. 4. Radiographs of left ilium showing recalcification of a large bone metastasis from a carcinoma of the breast following roentgen castration and radiation of the lesion. This patient gained fifteen pounds after her treatment and was relieved of all pain.

it should be used as a prophylactic measure in those cases where nodes are likely to appear, although they may not be palpable.

### SUMMARY

1. About eighty per cent of the patients coming to a cancer clinic should be treated in part or entirely with radiation.

2. Cancer of the skin, lip, mouth, throat, cervical lymph nodes, and uterus can be treated successfully with radiation alone and the results are frequently superior to those obtained with surgery.

3. Radiation is of real palliative value and sometimes curative in cancer of the kidney, ovary, testicle, prostate, oesophagus, breast, bladder, thyroid and lung, and certain of the brain tumors and sarcomas of bone.

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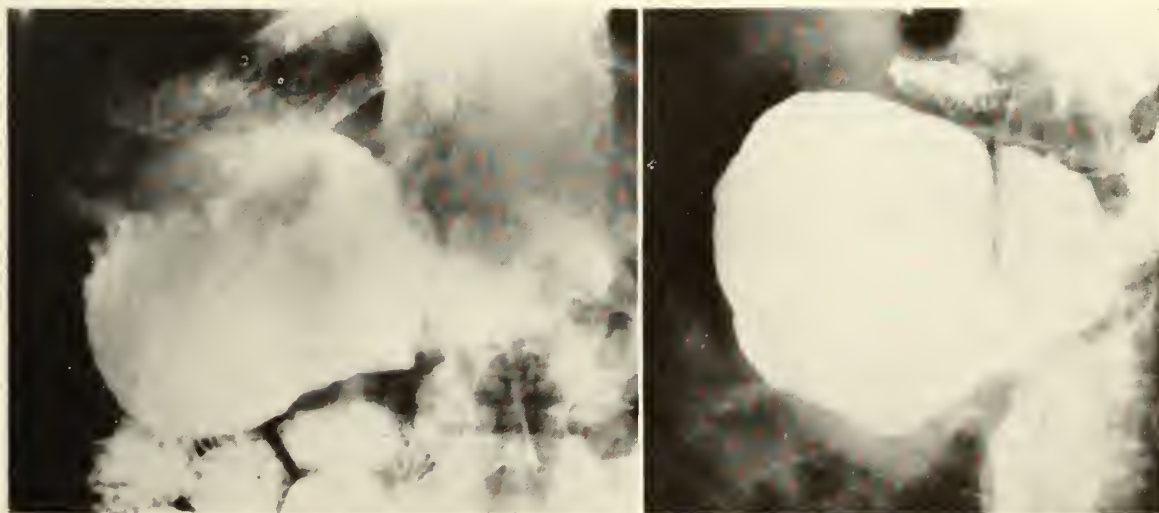


Fig. 5. Radiographs of a large tumor of the fundus of the stomach, probably a lymphosarcoma, before and four months after divided dose X-ray therapy. This patient has gained thirty-seven pounds and has remained well for three years.



## RADIATION THERAPY IN THE TREATMENT OF INFECTION\*

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X-rays and radium were used in the treatment of inflammatory lesions within a short time after their discovery. Since the apparatus, which was available during these early years, was most effective in superficial lesions and because observations of the effect of the rays on these lesions could be easily made, it was natural that X-rays and radium should first be used in treating skin diseases. Most of the numerous skin lesions, which have been successfully treated by X-rays, are inflammatory in origin or occur on an inflammatory base.

In the early years of the twentieth century, there were numerous reports in the literature dealing with observations of the successful use of radiation in a great variety of inflammatory lesions. There were also experimental reports that furnished a plausible scientific explanation for these good results.

Despite these early reports and the fairly frequent articles that have been presented since that time, there seems to be a reluctance on the part of the profession to use radiation in many cases where it gives good results. This may be partly due to a failure to realize that with the small doses, which are used in treating inflammatory diseases, there is no possibility of caustic skin reactions such as frequently follow the treatment of malignant conditions. Another reason that might make some physicians question the effectiveness of this method is the large number of apparently widely varying lesions in which its use has been advocated. Under the heading, "Mode of Action of Radiation," will be found a very good answer to this question because, on careful consideration, a common factor will be found in all these conditions; namely, an infiltration of leukocytes. It is the action of X-rays or the rays of radium on these infiltrating leukocytes that accounts for the favorable results which are obtained.

The following list of conditions, while not complete, is representative of the diseases

which have been reported as giving satisfactory results when treated with radiation:

1. Acute adenitis (pyogenic).
2. Tuberculous adenitis, peritonitis, iritis, and keratitis.
3. Actinomycosis.
4. Blastomycosis.
5. Bronchiectasis.
6. Cellulitis.
7. Early localized erysipelas.
8. Furunculosis.
9. Granuloma.
10. Gas bacillus infection.
11. Infected hemangioma.
12. Herpes simplex.
13. Herpes zoster.
14. Lymphangitis.
15. Mastoiditis (before bone destruction).
16. Otitis media (before bone destruction).
17. Onychia and paraonychia.
18. Parotiditis.
19. Pneumonia.
20. Acute peritonitis.
21. Low-grade pelvic infection.
22. Sinusitis (hyperplastic type).
23. Inflammatory skin lesions.

It will be noted that many of these conditions are acute and others are chronic. The technique of treating acute and chronic lesions differs as does the explanation of why satisfactory results are obtained. It is true that quite a few of these conditions are effectively treated by other means. Radiation should not be used to the exclusion of other forms of treatment, and only when radiation therapy will improve the end results, shorten the course of disease, or add to the patient's comfort is its use indicated. Where some specific form of therapy exists, which gives excellent results, as serum therapy, radiation need not be used. In diseases which threaten life or make the patient very uncomfortable, radiation therapy and all other forms of treatment should be used if there is a reasonable chance of their being effective. In gas

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bacillus infection, Kelly and Dowell have shown that the mortality is greatly reduced and the course of the disease greatly shortened by radiation. This disease has a very high mortality rate and any agent that will give greatly improved results should not be neglected.

The use of X-ray in carbuncles was advocated by Dunham in 1916, and many reports have occurred in the literature since that time. Unresolved pneumonia has been successfully treated by X-ray for many years, and in recent years Powell has shown that the course of lobar pneumonia can be shortened and the mortality and morbidity improved by the use of X-rays. Due to the fact that there are other good methods of treating pneumonia and to the fact that for most cases of pneumonia radiation therapy is not available, it seems unlikely that radiation will ever play a very important part in its treatment.

#### ACUTE INFLAMMATION

When an acute infection is to be treated with radiation, it should be done early if the best results are to be obtained. There is usually some pain relief within twelve hours, often much sooner, although there may be a period during which the pain is increased. Hot dressings are usually not necessary, and in those cases where hot dressings are usually used, radiation takes their place. Complete resolution of these early inflammatory lesions occurs in a few days following radiation. When treatment is delayed until areas of necrosis have developed, radiation will not prevent suppuration and will, in fact, hasten it. The areas of necrosis will undergo liquefaction much quicker following radiation and surgical drainage can be done sooner. In many cases adjacent tissue will quickly undergo resolution instead of being included in the necrosis, and the recovery of the patient will occur sooner. Thus it is apparent that, while early treatment is preferable, treatment started late in the course of the disease brings about desirable results.

The reports of different workers show that seventy-five to eighty-five per cent of acute inflammatory lesions are greatly benefited by the use of radiation. Failures are

most apt to occur: (1) when treatment is started late in the course of the disease; (2) when exudates have undergone organization; (3) when some degree of connective tissue proliferation has occurred.

It is worthy of note that staphylococcus infections generally give better results than streptococcus infections.

#### CHRONIC INFLAMMATION

Chronic infections will also yield the best results if they are treated comparatively early; that is, before too much fibrous tissue proliferation and organization of the exudate occurs. The relief of symptoms does not come as quickly as in acute infections, and it is necessary to treat at greater intervals of time and to give more treatments. Tuberculous adenitis furnishes a very good example of what can be expected when radiation therapy is used in a chronic infection. Treatments are continued at intervals of a few weeks for several months and good results are usually obtained. When a node breaks down, the liquid contents should be aspirated, preferably inserting the needle through normal adjacent tissue. The formation of sinuses can usually be prevented by this procedure, and a complete cure obtained in six to eight months.

#### MODE OF ACTION OF RADIATION

There is good evidence in the medical literature to account for the favorable effect which radiation therapy exerts on inflammatory lesions. Complete reviews of the literature will be found in some of the articles listed in the references.

*Acute Inflammation.*—There is no evidence that there is any bactericidal action as a result of the small doses of radiation which are used in treating infection. When it is recalled that a variety of inflammatory lesions respond favorably to radiation, it becomes apparent that there must be some common factor which is present in all these different lesions which is effected by radiation. This factor is the infiltration of large numbers of leukocytes in most inflammatory lesions and the radio-sensitiveness of these cells. Heineke, between 1903-1906,



demonstrated the marked sensitiveness of lymphocytes to radiation. Warthin, in 1906, in corroborating these findings demonstrated that lymphocytes may begin to show signs of disintegration in fifteen minutes after exposure to X-rays. Fox and Farley, in 1923, observed increased phagocytosis in radiated tissue. The polymorphonuclear cells and the eosinophiles are also sensitive to radiation, but slightly less so than lymphocytes. At first thought, it might not seem that the destruction of leukocytes in an inflammatory infiltrate would contribute to the healing of the process, but the relief or alleviation of symptoms and the rapidity with which healing occurs suggests that the liberated cell ferments can accomplish their work more quickly than when the natural disintegration of these cells occurs in due course of time. X-rays in destroying leukocytes seem to accelerate the production of or the liberation of ferments and to stimulate autolysis and phagocytosis. Desjardins has suggested that all of these represent different phases of the same action.

It is also known that favorable results are obtained in proportion to the degree of leukocytic infiltration, which exists in the lesion at the time the radiation is administered. When suppuration has already occurred and particularly when organization of the exudate has begun, the results which are obtained are less favorable.

*Chronic Inflammation.*—These reactions consist of varying degrees of leukocytic infiltration, fibrous tissue proliferation, and necrosis. The necrosis may have progressed to caseation, and calcification may even have occurred. We know that the only effect on necrotic tissue which could be expected from small doses of radiation would be to hasten liquefaction, and this is what results. We also know that connective tissue is relatively resistant to radiation, being only slightly less sensitive than squamous epithelial cells. As might be expected, response to radiation in chronic inflammatory lesions is in proportion to the amount of leukocytic infiltration present, and since this is not usually marked, the

treatments must be spread over a long period of time and given at less frequent intervals.

It must again be emphasized that the dose used in both acute and chronic inflammatory processes are small and, though the treatment be repeated many times, the total dose will not approach the limit of tolerance of the skin. In no case is the dosage comparable to that used in malignancy.

#### TECHNIQUE

In acute inflammatory lesions that are treated early, such as infected lymph glands, cellulitis, infected salivary glands, furuncles, and carbuncles, seventy-five r to 100 r are given over the area on three successive days. Usually this is all that is necessary, and the lesion undergoes rapid involution. When treatment is delayed until areas of necrosis have occurred or until frank suppuration is present, doses of 50 r to 100 r are used daily for two or three days and then at two- or three-day intervals until a total of five treatments have been given.

In chronic inflammatory lesions, such as tuberculous adenitis, 100 r to 150 r are given at weekly or biweekly intervals for six to twelve weeks. In chronic infections, such as blastomycosis, it may be best to give a dose of 300 r to 400 r and repeat at two- or three-week intervals for three or four doses. When children are treated, approximately two-thirds of the average adult dose is used.

The kilovolts and filtration are decided by the depth of the lesion. When 85 to 100 kilovolts are used, one to two millimeters aluminum filtration is sufficient. When 140 kilovolts is used, four to six millimeters aluminum filtration is used. When the lesion is deep-seated, 200 kilovolts are used with a filtration of one-half to one millimeter copper plus one millimeter aluminum. Some filtration should always be used, as it decreases the effect of the radiation on the skin.

#### REPORT OF CASES

Between January 1, 1938, and March 1, 1940, 240 inflammatory lesions were treated with X-rays. The results are tabulated in

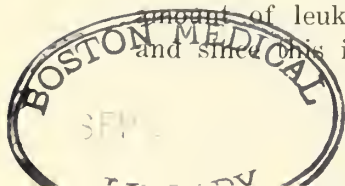


Table I. It should be remembered that these are selected cases, and that fully two-thirds of them were referred for treatment early in the course of the disease and are accordingly favorable cases. Satisfactory results are classed as those where the course of the disease was shortened, and where there was considerable relief from pain. Poor results are classed as those where there was no material effect on the duration of the disease and where little or no pain relief was obtained.

TABLE I

TWO HUNDRED FORTY INFLAMMATORY LESIONS  
TREATED JANUARY 1, 1938, THROUGH MARCH  
1, 1940

	Total No.	Satisfactory Results		Poor Results	
		No.	Pct.	No.	Pct.
Adenitis (pyogenic)	38	35	92	3	8
Adenitis (tubercu- lous) -----	18	16	88	2	12
Carbuncle -----	8	6	75	2	25
Cellulitis -----	22	20	91	2	9
Erysipelas -----	5	4	80	1	20
Furunculosis -----	44	40	91	4	9
Granuloma -----	8	7	87	1	13
Gas bacillus infec- tion -----	3	2	66	1	33
Herpes zoster -----	10	6	60	4	40
Herpes simplex ---	3	3	100		
Mastitis -----	5	4	80	1	20
Onychia -----	4	4	100		
Chronic otitis media	10	7	70	3	30
Hyperplastic sinusi- tis -----	26	21	80	5	20
Lymphoid hyperpla- sia (nose and throat) -----	14	13	93	1	7
Sciatic -----	10	3	30	7	70
Infected salivary glands -----	12	10	83	2	17
Totals -----	240	201	83	39	17

No attempt will be made to discuss all the types of infections that have been reported as yielding to radiation treatment. A group of cases will be reported which illustrates the good results that may be obtained in such infections as furuncles, carbuncles, infected lymph nodes, both pyogenic and tuberculous, infected salivary glands, cellulitis, herpes simplex, and hyperplastic sinusitis.

*Case 1.*—J. L. W., white female, age twenty-four, was first seen January 26,

1939. Two days previously the patient had had a tooth pulled on the lower left jaw. Twenty-four hours after the extraction marked swelling of the side of the face had occurred, which was extremely painful. It was found on examination that while the entire cheek and upper cervical region were involved, the area of greatest induration corresponded to the sublingual gland. It was impossible for the patient to open her mouth very wide. No fluctuation could be demonstrated. There were numerous small enlarged lymph glands in the upper part of the cervical region.

Three daily treatments were given, using 200 kilovolts, one millimeter copper plus one millimeter aluminum and 150 r. There was marked relief of pain within twenty-four hours. Most of the swelling disappeared within five days and at the end of eight days the patient had entirely recovered. Suppuration did not occur.

Figure 1 shows the appearance of the patient January 26, 1939, before X-ray treatment was started. Figure 2 shows the patient eight days later.

This case illustrates the results that may be expected where radiation therapy is administered to an acute inflammatory process early in its course before necrosis occurs.

*Case 2.*—T. E., white male, age forty-four, was first seen December 12, 1938. For three weeks there had been a swelling in the soft tissue at the angle of the left jaw and involving the left cheek and upper cervical region. During the past week this swelling had increased and examination shows marked induration of all of the structures in the upper left cervical region and the left cheek, including the left parotid gland. The patient could not open his mouth very wide, but inspection showed that the structures in the region of the left tonsil were pushed over almost to mid-line by the swelling. It was extremely difficult for the patient to swallow. There was no definite fluctuation present, but there was a suggestion of softness on palpation. The patient had a temperature of 100 degrees and was toxic, but had come a distance of thirty-five miles for treatment.





Figure 1.—J. L. W. (Case 1), white female, age twenty-four. Cellulitis of left jaw forty-eight hours after extraction of tooth. Three daily doses of 150 r of X-rays given over swollen area. Figure 2.—J. L. W. (Case 1), shows the case eight days later. Most of swelling disappeared in five days, and there was marked pain relief in twenty-four hours. Figure 3.—T. E. (Case 2), white male, age forty-four. Abscess of left jaw and the upper cervical region on the left side. This picture was made on the fourth day of treatment after considerable reduction in the size of the swelling. Six daily doses of 100 r of X-rays were given.

Six daily treatments of 100 r each were given. The first three were given with 200 kilovolts and two millimeters copper plus one millimeter aluminum and the last three with 200 kilovolts and one millimeter copper plus one millimeter aluminum. By the forty-eight-hour period the swelling was reduced enough to relieve the pressure in the throat. By the fourth day most of the cellulitis had disappeared and the abscess had pointed in two places on the skin near the angle of the jaw. Simple incision in these restricted areas was followed by evacuation of the pus and prompt healing. Unfortunately the picture of the patient when he was first seen was unsatisfactory. Figure 3 shows the appearance of the lesion on the fourth day of treatment.

This case illustrates what results may be expected from radiation therapy in a severe infection with abscess formation. Suppuration was hastened, the surrounding cellulitis was quickly absorbed, and the course of the disease greatly shortened.

*Case 3.*—B. C., white female, age twenty-five, had a small abscess on the upper left eyelid, which was opened October 16, 1939. When she was seen, October 19, 1939, there was an abscess of the lower lip, which was very swollen and indurated and showed no fluctuation. There was swelling of both cheeks with scattered areas of induration and discoloration. There were numerous slightly enlarged lymph nodes in the upper part of both cervical areas. Temperature was 99.8, pulse seventy-six, and the pa-

tient was toxic. The patient was referred for X-ray treatments. In addition to radiation, the patient was given neoprontosil and kept in bed.

Four daily X-ray treatments were given over the involved areas, using 200 kilovolts, one millimeter copper plus one millimeter aluminum and 100 r. Improvement was prompt, and before the fourth treatment was given most of the cellulitis had disappeared, the glands in the neck were definitely smaller and the abscess of the lower lip became softer and opened itself. Recovery was uneventful.

Figure 4 shows the multiple lesions on the face.

An infection in this location is serious. Radiation therapy should be used and shortens the course of the disease, but it should not be used to the exclusion of other methods of treatment.

*Case 4.*—M. H., white male, age fifty, was first seen February 8, 1940. He had accidentally stuck a small piece of hay stem in the cornea of his right eye three months before. When referred for radiation by the ophthalmologist, there was a low-grade infection involving the anterior part of the eyeball. No ulceration was present. Three daily treatments were given over the eye, using 140 kilovolts, five millimeters aluminum filter, and seventy-five r. The inflammation began to absorb and clear up by the time of the third treatment, and the lesion was entirely well at the end of ten days.

This case illustrates the excellent results that may be expected from the use of radiation in mild infections which are so located as to threaten some vital organ.

*Case 5.*—A. B. W., white male, age twenty-seven, was first seen July 12, 1939. He had had an acute streptococcus throat ten days previously and an enlarged lymph gland at the angle of the jaw on the left side. Both of these infections cleared up following the administration of sulfanilamide. July 8, 1939, a swelling appeared in the region of the left sublingual gland. When the patient was seen July 12, 1939, there was a hard mass in the region of the sublingual gland two and one-half by one and one-half by one inches, and there was considerable redness of the overlying skin. The patient was toxic and had a slight elevation of temperature and the swelling was painful. Four daily doses of X-ray were given over the mass, using 200 kilovolts, one millimeter copper plus one millimeter aluminum filter and 150 r. We expected that this lesion would suppurate and have to be opened. We were pleasantly surprised that this did not happen. There was some pain relief following the first treatment and marked pain relief by the time the last treatment was given. The swelling was reduced to half its former size within a week and was completely absorbed in three to four weeks.

Figure 5 shows the appearance of the patient, July 12, 1939, and Figure 6 shows his appearance some weeks later.

*Case 6.*—A. C., white female, age twenty-nine, was referred for X-ray treatment July 15, 1939. For five days the patient had had an area of swelling and induration in the upper outer quadrant of the right orbit. This mass of inflammatory tissue was large enough to cause pressure on the eyeball, and the mass was very red. No fluctuation was present. Four daily treatments of X-ray were given over the lesion, using 140 kilovolts, five millimeters aluminum filter and 100 r. By the time the last X-ray treatment was given the central portion of the mass had become soft and was incised. Resolution was rapid and the resulting scar cannot be seen. Most of the induration was absorbed and was not included in the area of central necrosis.

Figure 7 shows the appearance of the eye July 15, 1939. Figure 8 shows the appearance of the patient after recovery.

In this case the radiation was not given early enough to prevent suppuration, but did shorten the duration of the infection and prevented its spread.

*Case 7.*—M. L. W., white female, age thirty-three, was first seen December 30, 1938, when she was referred for an X-ray examination of the chest. There was marked peribronchial thickening which was most pronounced at the bases. There were no changes that were suggestive of active tuberculosis. In the written report the suggestion was made that such chest findings were often associated with chronically infected sinuses.



Figure 4.—B. C. (Case 3), white female, age twenty-five. Abscess of lower lip, associated with multiple areas of cellulitis on cheek and enlarged cervical lymph nodes. Four daily doses of 100 r of X-rays were given. Figure 5.—A. B. W. (Case 5), white male, age twenty-seven. Cellulitis of sublingual gland and adjacent tissue following streptococcus infection of throat. Four daily doses of 150 r of X-rays were given. Figure 6.—A. B. W. (Case 5) shows the appearance of the patient after recovery. Suppuration did not occur.



The patient returned February 25, 1939, for an examination of her sinuses. There was considerable thickening of the membrane in all the sinuses, and these changes were most marked in the antra. The patient also had hypertrophied lymphoid tissue throughout the nasopharynx. The tonsils had been removed several years previously. She stated that for many years she had had repeated colds every winter. These acute infections of the nose and throat would be associated with bronchitis and cough with slight elevation of temperature, and there would be very little time from early fall until late spring, when she was free of these symptoms. Roentgen therapy was advised at this time, but was delayed. The patient returned for treatment September 30, 1939. Seven treatments were given at weekly intervals, using 200 kilovolts, one millimeter copper plus one millimeter aluminum and seventy-five r to each of three areas so arranged as to cover the sinuses and nasopharynx. The patient has gone through the winter without any colds and has been free of cough and all other symptoms. There has been no elevation of temperature. During the severe cold and snow, she spent a great deal of time in the open, engaging in winter sports, and at other times has not made any effort to avoid exposure. The hypertrophied lymphoid tissue in her nasopharynx has disappeared and her sinuses are clear.

This case illustrates the results that can be expected with radiation therapy in properly selected cases of chronically infected sinuses of the hyperplastic type associated with hypertrophied lymphoid tissue in the nasopharynx. Infected sinuses should not be treated with radiation indiscriminately. The hyperplastic type of sinusitis, when properly treated with radiation, gives excellent results. The atrophic type receives no benefit. Hodges and Sneed and Firor and Waters have indicated in their articles the various types of sinusitis and the results that can be expected with radiation.

*Case 8.*—B. S., white male, age six, was first seen April 18, 1939. He had been underweight for a year and had had frequent colds. Six weeks previously the right

cervical glands became enlarged following an acute upper respiratory infection. The glands had continued to enlarge until at this time the largest gland was two inches in diameter, and there were several other glands ranging in size from one and one-half to one-half inches. While the chest showed a moderate amount of peribronchial thickening, and there was a positive Mantoux test, there was some question as to whether the enlarged glands were tuberculous or pyogenic in origin. Five daily doses of X-rays were given, using 140 kilovolts, five millimeters aluminum filter, and 100 r. At the end of two weeks there had been some reduction in the size of the glands, but they had not entirely disappeared. The slow response to X-ray was a very good indication that the lesion was tuberculous. At this time weekly treatments of X-rays were started, using 140 kilovolts, five millimeters aluminum, and 150 r and continued until the patient had six treatments. Following this six additional treatments were given at weekly intervals, using 140 kilovolts, five millimeters aluminum filter, and seventy-five r. While resolution was slow, it was finally complete and no suppuration occurred.

Figure 9 shows the appearance of the neck April 18, 1939. Figure 10 shows the appearance of the patient October 3, 1939, after the glands had disappeared.

This case illustrates the results that can be expected in favorable cases of tuberculous adenitis. Approximately one-half of our cases have required aspiration of the contents of one or more of the glands which broke down. No sinuses developed.

*Case 9.*—J. O. J., white male, age forty-four, first seen February 6, 1940. He had an acutely swollen area on the upper lip at the right corner of the mouth. This lesion was an inch in diameter, was elevated one-half inch above the surrounding skin, and consisted of a herpetic blister on an indurated, swollen base. The swelling and blister were thirty hours old, and there was an enlarged submental gland beneath the edge of the lower jaw, which had appeared twelve hours before. There was consider-



Figure 7.—A. C. (Case 6), white female, age twenty-nine. Abscess of right orbit of five days' duration. No fluctuation. Four daily doses of 100 r of X-rays were given over the orbit. Figure 8.—A. C. (Case 6) sometime after recovery. Fluctuation developed soon after X-ray treatment. Drainage through a surgical incision was followed by prompt recovery. Figure 9.—B. S. (Case 8), white male, age six. Tuberculous adenitis of six weeks' duration. Treated with twelve weekly doses of X-rays varying from seventy-five r to 150 r.

able pain, but no elevation in temperature. Figure 11 shows the appearance of the lesion.

One treatment was given February 6, 1940, and a second one February 7, 1940, using 200 kilovolts, one millimeter copper plus one millimeter aluminum filter and 100 r. Both the lip lesion and the swollen gland were included in the field. By the third day, the lesion had improved so much the patient did not return for treatment. When seen on February 9, 1940, the gland had entirely disappeared and all that remained of the herpetic lesion was a dried crust. All of the swelling had disappeared.

Herpes simplex responds in almost every case to small doses of roentgen therapy. Some cases are so trivial they do not see a physician. When the lesion is large and painful, or when complicated by an infected gland, X-ray therapy will give prompt relief.

*Case 10.*—S. E. J., white male, age fifty-one, was first seen January 26, 1939. A carbuncle had been present on the back of the neck for two weeks and had been incised January 22, 1939. There was some discharge, but the original lesion was very much indurated. During the preceding forty-eight hours there had been an extension of the induration. The area, which had been incised measured one and one-half inches in diameter, and the area of involvement, including the recent extension, was four and one-half inches in diameter. Three daily doses of X-rays were given, using 200 kilovolts, one millimeter copper

plus one millimeter aluminum filter and 150 r. Five and seven days after the third treatment a fourth and fifth treatment were given, using the same technique.

There was considerable pain relief and this occurred during the first twenty-four hours. The area, which had been incised, softened promptly and began to discharge large quantities of pus. The area of recent extension cleared up within a week's time and underwent resolution without being included in the suppurative process. Several weeks were required for the necrotic central portion of the lesion to slough out and heal, but this occurred more quickly than ordinarily would have been expected.

This case illustrates what may be expected when radiation therapy is applied late in the course of a severe inflammatory lesion. Necrosis had already occurred. The treatment hastened suppuration in the necrotic area and caused resolution of the adjacent inflammatory tissue, which had not yet undergone necrosis. It also gave the patient considerable pain relief.

Figure 12 shows the appearance of the lesion before treatment.

If carbuncles and similar lesions are treated early; that is, before necrosis occurs, suppuration can usually be prevented.

*Case 11.*—G. W. R., white female, age forty-two, was first seen October 17, 1938. There was a large infected mole on the right cheek and a palpable gland at the angle of the jaw on the right side. The acute infection had only been present five days and the type of induration in the cheek and the





Figure 10.—B. S. (Case 8) shows the appearance of the patient six months later. Complete recovery without suppuration. Figure 11.—J. O. J. (Case 9), white male, age forty-four. Herpes simplex of thirty hours' duration complicated by a large submental lymph node. Two daily doses of 100 r of X-rays given. There was prompt relief of pain and rapid recovery. Figure 12.—S. E. J. (Case 10), white male, age fifty-one. Carbuncle which had been present two weeks and had extended to adjacent tissue in preceding twenty-four hours. Three daily doses of 150 r of X-rays cleared up recent extensions and hastened suppuration in necrotic area.

painful, swollen gland indicated a pyogenic infection. The patient stated, however, that the mole had been growing in size for a year and had doubled in size during this time. The question, which presented itself, was whether or not the lesion was entirely inflammatory, or might not be superimposed on an early malignant change.

The lesion on the cheek was given 3,500 r divided into five treatments, which were given every other day, using 140 kilovolts, five millimeters aluminum filter, and 700 r. The swollen gland in the cervical region was given four treatments, using 200 kilovolts, one millimeter copper plus one millimeter aluminum and 100 r. These treatments were also administered every other day. A margin of one-half inch of surrounding skin was included in the area treated on the cheek.

The gland in the neck quickly subsided and entirely disappeared in a week's time. There was a moderately severe reaction on the cheek with an intense erythema. Suppuration occurred and pus was dis-

charged without the lesion having to be incised, although the opening was enlarged to facilitate drainage. The infection was practically healed in two weeks, and at the end of five weeks the reaction from the irradiation had entirely cleared up. The mole was still present and was removed at this time by coagulation with surgical diathermy.

Figure 13 shows the appearance of the lesion when first seen October 17, 1938, and Figure 14 shows the appearance December 1, 1938, shortly after the mole was coagulated. The discoloration of the skin later disappeared.

Some criticism might be offered because of the large dose of radiation which was used on the lesion on the cheek. In view of the questionable nature of this lesion, it is felt that the treatment was justified. The end results were certainly good.

#### SUMMARY

1. Radiation therapy is indicated in a great variety of inflammatory lesions and

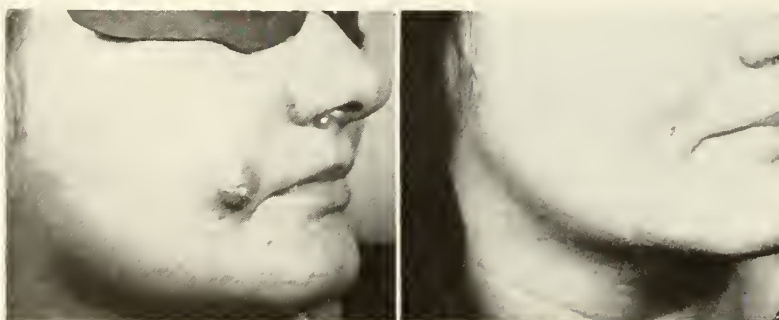


Figure 13.—G. W. R. (Case 11), white female, age forty-two. Infected mole on right cheek with enlarged cervical glands. There was a history that suggested possible malignant changes. Five doses of 700 r of X-rays were given on alternate days.

Figure 14.—G. W. R. (Case 11) shows appearance following recovery from infection and coagulation of mole. Clinical course of the case ruled out the possibility of malignancy.

favorable results can be expected in seventy-five to eighty-five per cent of the cases.

2. Favorable results are classed as those in which there is a marked reduction in the duration of the disease and considerable pain relief.

3. The earlier the radiation is administered in the course of an acute infection, the better the results which are obtained. When administered before necrosis occurs, suppuration can usually be prevented. After necrosis has occurred, suppuration is hastened and surgical drainage can be instituted sooner and the operative procedure need not be so extensive.

4. In chronic infections radiation is administered at less frequent intervals and more treatments should be given. The course of the disease is shortened and considerable pain relief is obtained.

5. Generally speaking, the results which are obtained are in proportion to the amount of leukocytic infiltration present at the time of the treatment.

6. The results obtained in 240 inflammatory lesions treated during the past two years are tabulated. Individual cases are reported, which illustrate types of cases in which favorable results may be expected.

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### DISCUSSION

DR. H. S. SHOULDERS (Nashville): Mr. President and Gentlemen: It seems an odd coincidence that I am going to begin where Doctor Bogart left off. I cannot disagree with anything he has said. I was fortunate enough to read his paper before I came over, so I have had some lantern slides made to continue this discussion.

The first case that I want to report is a child nearly seven years old who had been running a fever with extreme cough for practically fourteen months. As we have done many, many times, we have been called upon to X-ray a chest and make a diagnosis of bronchiectasis or certainly a lesion at the base of one or both lungs, and then go back and X-ray the sinus and find the trouble. I would like to show you the first slide. Both antra were as cloudy as could be.

(Slide) This is the right antrum, this the left, after X-ray treatment.

(Slide) This is the lesion at the base of the child's lung.

(Slide) This is what happened in that lung after treatment. To my mind, this is proof positive and the best proof that we can have of what has happened in this child. We see so many cases of what we call sinobronchitis and so many mistaken diagnoses that I think it is one of the important things we have coming up in medicine. Many of these cases have been called tuberculosis. This child was sent in with the idea that she might have tuberculosis. Some say: "Well, this child would have gotten well if you had given it time." My good friend, Doctor Witt, said he was going to write down one thing that happened and I said: "I bet I can write the same words you do without knowing what you write." I wrote down what I thought he was going to say that cured the case, and that was time. She had had fourteen months of time before we gave her the treatment. This result happened in ninety days; that is, ninety days from the time the first treatment was made until the child was perfectly well.

In the treatment of sinusitis I am going a little further than Doctor Bogart does. I say we cannot tell exactly every time whether we are going to have a sinus that will respond to X-ray treatment. I am a little more enthusiastic, probably, about the treatment than he is, and I can go a little bit further and say that you are not going to do your patient any harm, and I think in three or four doses you can tell pretty well whether the patient is going to respond.

I want to emphasize one more important thing. I think these lungs show exactly what does happen in these cases. It will not be so striking in the adult; that is, you cannot see the improvement in the lung, but in the very case that the ear, nose, and throat men have had so much trouble with (and they dread to see a child come in with sinusitis), I think we have something that will help a great deal.

(Slide) Here is a case of tularemia. It has been the custom of a great many people to treat tularemia after the glands are all involved. This is a case that was treated two days after the initial lesion started. He came in with a temperature of 105 on the thirteenth and on the nineteenth he was discharged from the hospital and in two weeks' time he went back to work.

(Slide) This is a rather striking case; the temperature was not quite so high, 102, I believe, and he came in on the fifteenth and was discharged on the nineteenth. We had a number of these cases. This is at the Negro Hospital at Meharry College, and a great many Negroes have tularemia. We have treated several of them with X-ray and they treated some more in the medical division in the ordinary way. We had our patients back on the job in an average of just a little less than three weeks' time, when the others took a much longer time.

I want to emphasize an important thing that I think has been an awfully distressing thing to the average surgeon, and that is gas gangrene. We have treated a number of cases of gas gangrene in the past seven or eight years in this same hospital, and since we have been using X-ray routinely in the treatment, the last account I had we had treated fourteen cases in eight years without a single death. That is absolutely the routine. Just as soon as a diagnosis of gas gangrene has been made we begin our treatment.

I think this is a very important paper. I am not going to tell you to treat everything that comes along with X-ray, but you can get a great deal of help in treating many of these inflammatory conditions, and I want to emphasize one more thing—today I am a great deal more enthusiastic about treating sinusitis than I ever have been.

DR. C. H. HEACOCK (Memphis): This subject has been presented to our society before, but I do not think it has ever been more ably presented than by Doctor Bogart today. There was so much material in his paper that it was impossible for him to present it in twenty minutes. I certainly would commend it to all of you when it is published in full in the *JOURNAL*, and I suggest you see his exhibit out in the mezzanine floor.

With the advent of chemotherapy in infections, it was prophesied that we radiologists would not have so many inflammatory conditions to treat. That has not been my experience. I believe it is due to the fact that in chemotherapy and in radiation therapy we have a different method of ap-

proach or attack on the organism. Chemotherapy and the method instituted by the clinician are directed against the infecting organism itself, while in radiation the method of attack is to increase the resistance of the body to infection by stimulating the leukocytes, as Doctor Bogart has mentioned, and by having them do as much work in a few hours as they ordinarily would do in their entire life cycle of several days.

Doctor Bogart emphasized two benefits in these inflammatory conditions: first, the shortening of the duration of the disease; second, the lessening of pain. I think we can expect two more benefits in many of these cases. So often these infections come in waves. For instance, in furuncles, just about the time we have one furuncle subsiding, there will be another one start in the same neighborhood. I believe that radiation therapy is one of the greatest agents we have to break this chain of recurrent infections, due especially to the staphylococcus aureus. The other benefit we see is lessening of scars following irradiation therapy. Doctor Bogart showed you the young lady with the furuncle on her upper lid, and then following radiation he showed disappearance with practically no scarring at all. There is an inhibitory effect produced by radiation in the production and proliferation of connective tissues. We treat keloids by radiation therapy, and cure them if they are not too old. By the inhibitory effect of radiation upon connective tissue formation we do, to a great extent, lessen the disfiguring scars that sometimes result following furuncles and carbuncles and other inflammatory lesions.

Doctor Bogart's list was very complete. He did not mention some of the contagious diseases. Whooping cough has been treated with radiation therapy, first advocated by Leonard and George of Boston. About thirteen years ago I had the opportunity to treat 200 cases of whooping cough in one series during an epidemic with remarkable benefit noted by all the pediatricians taking care of the children at that time. There was only one death, and that child had pneumonia when we instituted the treatment. One child was quite spectacular. The radiation therapy was begun after the contact and before the child had actually developed a cough, and it was completed according to the technic of Leonard and George in giving three treatments on alternate days, and about two days after his last treatment the child whooped just one time. He never whooped but once and the course was very short, which illustrates the benefit if it can be given early.

Doctor Bogart did not get a chance to emphasize gas gangrene. Doctor Shoulders told you more about that. There is one thing, however, about gas gangrene that has not been brought out in the discussion. It has been practiced down at the John Gaston Hospital in Memphis for sometime, and that is giving prophylactic radiation in those cases where we have a reasonable right to expect gas bacillus infection like gunshot wounds. It

has been the practice at the John Gaston Hospital for sometime to give three prophylactic treatments on alternate days of 100 roentgens each day. Since the institution of this method of treatment the incidence of gas bacillus infection has been greatly reduced in this type of case. I have seen two cases of gas bacillus infection this year following the removal of teeth, in which all the tissues of the neck on both sides were infiltrated with gas. Both responded very well to radiation treatment plus sulfanilamide and antitoxin.

We should not rely on radiation alone in these cases; we should use all the methods that we have—chemotherapy and radiation therapy—because the methods of attack upon the infection are different in the two and the results will be enhanced by combining them.

DR. S. S. MARCHBANKS (Chattanooga): In connection with Doctor Bogart's paper I want to report a case on the order of inflammatory conditions, showing the value of X-ray treatment.

A boy of eleven years was referred to me; he was seen first on January 4, 1940. He was presented with a macroglossia. The tongue protruded from the mouth about an inch and a half, and it was almost that thick, too, and was corrugated and quite inflammatory. There was considerable enlargement of the anterior cervical nodes with submandibular edema. The temperature was 102. There was no family history of malignancy. The eye, ear, nose, and throat findings were negative. The chest was negative by X-ray and clinically.

The gastrointestinal tract was negative; the genitourinary tract was negative; the liver and spleen were within normal limits; the thyroid was not enlarged; the epitrochlear and inguinal nodes were slightly enlarged.

The serology was negative—Kahn and Kline.

Blood count: hemoglobin 58 per cent, red blood cells 3,000,000, white blood cells 14,500, polymorphonuclears eighty-four, lymphocytes thirteen, and eosinophiles thirteen.

He was also negative to typhus, sprue, and no filaria of elephantiasis were found, no Dorothy Reed cells, only a chronic lymphangitis.

We felt that we dared not take a section from the tongue because sometimes those cases do not heal. Maybe I am wrong. The possibilities thought of were Hodgkin's disease, elephantiasis, sprue, typhus, lues, sarcoma, angioma, lymphangioma, and lymphangitis. Most of these were ruled out, so it seemed most plausible that with the change in the neck it was an inflammatory entity, lymphangitis. Unfortunately, no test was made for allergy. Maybe that should have been done. To make this story short, the macroglossia cleared up and the tongue was all in the mouth in six weeks, and the only treatment was six doses of X-ray to the tongue and neck. Also most of the neck swelling had cleared up at that time.

In this connection let me emphasize the third point in Doctor Bogart's summary: the earlier the



radiation is administered the better the result and the less the need for or degree of operative procedure.

DR. EDWARD T. NEWELL (Chattanooga): It is with a great deal of temerity that I arise to discuss this paper, as we have heard from so many distinguished radiotherapists. However, as a general surgeon, from observation of the subject, I wish to say that I arise not to condemn the paper, but to approve of it.

Neoplastic surgeons know that in the treatment of malignancies we do not depend entirely upon the aseptic scalpel of the cautery, but we bring to our assistance X-ray therapy and radium. I believe that the time has come when our acute inflammatory conditions should seek assistance, as Doctor Bogart's paper would indicate, and as Doctor Shoulders and Doctor Heacock and Doctor Marchbanks have brought out the use of X-ray therapy; but I do not think we should lose sight of the fact that our *chief* aid in these conditions is still *surgery*, and coupled with it *medicine* as well as X-ray therapy, the three forming a trinidad of treatment.

It has been brought out by Doctor Heacock that they have all but eliminated gas gangrene over in Memphis by the prophylactic use of X-ray therapy in cases that are likely to develop gas gangrene. We have had quite the same experience. For a number of years we have been using as a prophylactic measure, X-ray therapy along with our gas serum treatment in appropriate cases as well as radical surgery. But I do not believe we should let the pendulum swing too far in this or any direction and depend too much on any one method of attack in one's emergency surgery. We are using sulfanilamide, not after the patient has developed infection and fever, but in every case that is prone to become infected. We have found by this procedure that we have materially reduced our infections. Along the same line, I trust that prophylactic X-ray therapy will be correctly evaluated. Only time will tell its real merit in the acute infections.

Doctor Bogart, I have enjoyed very much hearing your splendid paper. I desire to stress in my brief discussion that one should not lose sight of the fact that along with X-ray therapy in infections, medicine and surgery are of *paramount* importance.

DR. F. B. BOGART (closing): Mr. President, I appreciate all of the discussions, and I emphasize,

as did the other speakers, that there should be the closest cooperation between the radiologist and the surgeon. The only difference between Doctor Newell's position and mine is that he would use irradiation as an adjunct to surgery in the treatment of infections, and I would use surgery as an adjunct to irradiation in the treatment of infections. I think surgery in a great many fields is the queen, but not in infections; it is an adjunct. In other words, use your irradiation and use it early. It does not make any difference whether the case comes first to the radiologist or to the surgeon. If you would apply the irradiation that you are going to use early, you would cut down the duration of the disease and hasten suppuration, if it is going to occur, and when surgical drainage has to be done, and it quite frequently has to be, the area which has to be drained will not be so large.

I am glad that Doctor Shoulders emphasized the trial of irradiation in sinuses. I am inclined to be conservative in all of my work, and what I was trying to emphasize was that it is a mistake for a general practitioner to refer to the radiologist all cases of sinus trouble, and it would be a terrible mistake for him to attempt to treat them all, which, of course, he would not do if he were a competent radiologist. In the type of cases that may offer hope of getting good results irradiation should be tried. If you have atrophic rhinitis, of course, it would be ridiculous to even try irradiation, because it is not going to do any good and you know at the start that it is not going to do any good.

I am glad that both Doctor Heacock and Doctor Shoulders brought out the idea of breaking the chain of infection and the use of so-called prophylactic irradiation. Doctor Kelly, of Omaha, who has been one of the pioneers in the use of irradiation in gas bacillus infection and other types of infection, has reported that they are using—and they were among the early ones—so-called prophylactic irradiation in dirty wounds, and that they are not doing as extensive debridement as they used to do. They are cleaning up the wound and giving irradiation routinely, and their results, if they are confirmed by others, as they apparently are from the reports here and elsewhere, are going to be greatly superior to the results that have been reported by the use of the older methods of treatment alone. It is, of course, an example of the fact that whatever means of treatment is used in disease there should be the closest cooperation between the general man and the specialist.

## PROLONGED LABOR\*

E. F. BUCHNER, JR., M.D., Chattanooga

The amount of time required for labor and delivery has been a concern of practical interest to most of us at least a few times, and to some of us fairly frequently. Prolongation of the usual amount of time required is not an infrequent occurrence that has presented its problems ever since the days of our earliest recorded history. Although obstetrical observations and practices of many years ago were quite different and our current results are far more satisfactory, the present general lay and professional attitudes toward the prolongation of labor indicate a rather firmly established and deep-rooted fear which was probably built up by the many difficulties and disasters encountered. The mere prolongation of labor is not necessarily serious. In ordinary usage, however, the term has been confused with difficult labor to such an extent that it is now accepted for difficult labor, or dystocia, particularly by the laity. This unfortunate confusion of terms still occasionally leads patient's relatives into insisting upon ill-advised interference, even though it is obvious that an accurate differential diagnosis is the first essential for proper treatment and safe conduct of labor. Furthermore, the recent increase in the number of original communications about hormone uses, pelvic classifications, and statistical reviews in large series in almost all our journals indicates our need for a review and study of the mechanism of labor so that we may treat dystocia more efficiently.

Dystocia may be due to a number of causes and is most frequently encountered in those groups of cases, first where the expulsive forces are subnormal and unable to overcome the natural resistance to delivery, second where the resistance of the birth canal is greater than usual and offers a serious mechanical obstacle, third where faulty presentation or excessive development of the fetus retards or prevents delivery, fourth where accidental complications interfere with the normal progress of

labor, and fifth where any combination of the previously mentioned situations may occur at the same time. Dystocia has been seen, in all probability, far more frequently as the result of several causes operating simultaneously than as the result of any single cause, although fortunately on account of nature's many adaptations and compensations is often relieved by treatment of the most prominent feature.

As there is no absolute standard by which the character of labor pains can be gauged, the efficiency of the uterine contractions can be measured only by the clinical observation of their effectiveness. In the early stages of labor the uterine contractions often recur at irregular and infrequent intervals, gradually increasing in frequency, intensity, and duration. Satisfactory relaxation between the contractions of the uterus is quite important, as tetanic contractions and the formation of contraction rings subject the fetus to great hazard and present serious obstructions to delivery. Moderate analgesia reduces the incidence of these atypical severe contractions. There are many instances in which the force of the contractions is insufficient and for that reason alone labor does not progress normally. Uterine inertia is usually considered primary where the pains have never developed adequate force and secondary where sufficiently strong pains have been developed earlier, but do not continue satisfactorily. Fatigue after hours of strong labor is the usual cause of secondary inertia. The net result, therefore, of either primary or secondary inertia is a delayed dilatation of the cervix or completion of the second stage. Frequently imperfect dilatation of the cervix is considered to be caused by abnormal rigidity or stenosis, whereas in fact slow dilatation of normal tissues is most frequently the direct result of inefficient contractions. Prolongation of the second stage of labor is apt to be due also to deficient action of the accessory abdominal, chest, and arm muscles. Inertia or atony in the third stage is the usual cause of post-partum

\*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.



hemorrhage. The etiology of inefficient contractions does, of course, vary with individuals and is at times somewhat obscure. Inertia is often treated far better by encouragement and rest, enforced if necessary by hypnotics, than by the use of oxytocics. Several recent reports indicate that we may have a valuable therapeutic agent for primary inertia in the estrogenic substances. Perineal forceps in the majority of instances, and small fractional doses of pituitary extract in rare special occasions, though it is not recommended, have long been used for the inertia which develops just before the termination of the second stage of labor. One form of inertia, for which the attendant is directly responsible, of course, is that which follows unnecessarily heavy narcotized analgesia.

Dystocia arising in the presence of expulsive forces of normal strength opposed by abnormalities in the structure or character of the birth canal is a live subject of considerable recent study. Atresias, improper development, displacements, and tumors should be recognized fairly easily. Though rarely seen, these dystocias are usually serious. The study and classification of the different types of normal and abnormal bony pelvic shapes has been one of our country's main contributions to the art of obstetrics. The work of just one generation ago, based on direct manual measurements, led to the recognition of the various forms familiarly mentioned as justomajor, justominor, rachitic, funnel, flat, and asymmetrical. The various mechanisms of labor required by each type were taught, results of large series tabulated, and the need for complete prenatal examination and care was conclusively demonstrated to attendants and the laity. Absolute contraindications to infrapelvic delivery were shown to be rare and interference proven often unwise. Recent reviews of this same subject with the aid of more accurate techniques have shown some of the limitations of the earlier methods and led to the development of the newer morphological classifications. The borderline and relatively contracted pelvises, the ones most frequently met in dystocia syndromes, with their par-

ticular problems of the test of labor, prognosis, forcep, or abdominal delivery have been shown to be one of the most searching tests of the attendant's ability. Those of us working in less completely equipped areas need not feel especially handicapped by the lack of suitable X-ray and hospital equipment. Sufficient information is usually gained from careful manual mensuration to enable the recognition of the morphological type and relative size of almost any pelvis. Any dystocia encountered thereafter will of necessity be influenced by soft tissue and force as well as pelvic mechanism considerations.

Labor and delivery call for a satisfactory adaptation of the passenger to the passage, and a third group of dystocias may arise from faulty presentation of the normal sized, excessively or abnormally developed fetus. A simple listing of the transverse, oblique and compound positions, less favorable variations of both polar presentations, generalized excessive growth associated with postmaturity, and abnormalities which limit the excessive development to one portion of the fetus will serve to emphasize the need for closer and more accurate prenatal and intrapartum examinations. Difficulty in diagnosis of the size and degree to which the fetal skull can be molded without harm, as well as the exact nature of developmental abnormalities, should stimulate the use of the more accurate techniques of examination whenever available.

Another group of dystocias, accidental complications, is composed of a large group of less closely related conditions. Some coincident general or systemic diseases, severe poisonings, toxemias, certain forms of antepartum and intrapartum hemorrhage, and accidents of violence, both external as a fall or blow and internal as rupture of the uterus, may cause more or less relatively grave delay. Apparently we see fewer examples of these dystocias now just as we observe that other accidental hazards are reduced by higher standards of living. The results of these rare complications are generally serious. Therapy occasionally necessitates at least temporary disregard of the fetus in the effort to gain control of

the situation, and is obviously highly individualized.

In ordinary daily practice we are most likely to encounter dystocia as the result of several contributing factors. There is a mid-pelvic arrest with the occiput remaining obliquely posterior, the cervix only half dilated, the membranes ruptured for over sixteen hours, and inertia established as the result of fatigue. The patient is a little past term with her first pregnancy, is in her early thirties, and is equipped with a borderline android pelvis. This or any other of a great variety of clinical pictures of dystocia presents problems for which we all have been responsible. At such times it is comforting to have at hand all the data obtainable during the period of prenatal observation. Labor should be induced for assured postmaturity. Fluids, glucose, supportive treatment, hypnotics, and sedatives are valuable for inertia and exhaustion. Manual manipulations to correct faulty presentations are indicated before any attempts at instrumentation. Forceps delivery, with the occiput remaining posterior in the occasional narrow anthropoid type of pelvis, performed gently on proper grounds will also solve a large fraction of these problems. Indeed the majority of the instances of dystocia can be intelligently and adequately handled in the home or isolated place. A small fraction of the more severe grades of dystocia may need hospitalization for abdominal delivery. Classical section, if used at all, should be reserved for the elective case before the onset of labor. Low cervical section or laparotrachelotomy may be used after a good test of labor, but should not be relied upon to protect the neglected dystocia from peritonitis. The difficulties and poor results of destructive operations on the fetus often make the radical Porro section the procedure of choice for the neglected case.

Accordingly we do have a wide variety of therapeutic measures, of which we will make proper selection and application in direct proportion to the emphasis we place on accurate diagnosis. Constant attention to these considerations will steadily improve our ability and results.

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## DISCUSSION

DR. RICHARD McILLWAINE (Knoxville): Mr. Chairman, Ladies, and Gentlemen: Doctor Buchner has given us an excellent paper on this subject, and he has covered it in detail. Each time you read his paper you enjoy it that much more, and when it comes out in the JOURNAL we will all get a lot more out of it.

He mentioned that there is always an underlying cause for prolonged labor. One of the chief causes, he says, is uterine inertia or weak pains, and usually there is a cause for the weak pains. One of



the chief causes, I think, is polyhydramnios, because, of course, the uterus is stretched, making it too thin really to contract well. In that case, of course, the thing to do is to rupture the membranes so it can contract down on the baby and give sufficient strength to the contraction to dilate the cervix.

Another cause was increased resistance or potential obstruction of the soft parts as very rigid, undilatable, or difficultly dilatable cervix. In that case, as he says, it just takes time. The question of how long labor is prolonged enters in, and he says a long labor is not necessarily a difficult labor because it just consumes a certain amount of time to dilate the cervix and to get the head molded and to get the pelvic canal large enough for the presenting part to come through. I have found the Voorhees bag one of the most satisfactory methods in a patient who is exhausted. If you put a Voorhees bag in, often it will get a patient out of a right tight place—and the doctor, too.

He mentioned the lay opinion and the relatives who are apprehensive, influencing your treatment. Personally, I do not pay much attention to relatives because I feel I know little enough sometimes in these difficult cases, and I do not feel they have much chance to help me out. As mentioned by Doctor Peterman, I think it is a good plan to get those relatives out, if you can, and give yourself a chance to think.

He mentioned pelvic classification, the justomajor pelvis, and justominor pelvis, the android and the anthropoid. When you get there scrubbed up and trying to deliver the patient, you cannot worry about that classification right then, and I am always glad if it is justomajor when I am trying to deliver her.

He said that another cause of prolonged labor was abnormal presentation of the normal-size baby in a normal pelvis. In that case, and I agree with him 100 per cent, the proper way to take care of that is manual correction before you use any instruments at all. Of course, the Scanzonian maneuver may be well handled by an experienced person, but after your patient has been in labor a long time and you have fairly good dilatation, the thing that works best in my hands is to push the head up a little so you can turn it into the proper position and then slip on your forceps. I do not consider that a high forceps delivery. I am not in favor of high forceps, but if a head has been down and you push it up, put your forceps on and bring it down, I would not classify that as high forceps, although it is applied when the head is not engaged.

Doctor Buchner said that he thinks very often a good plan in the android pelvis, the narrow pelvis laterally, is to slip the forceps on and deliver the head in the posterior position. Personally, the most humiliating circumstance that can arise for me is to see that face looking up as I deliver it. I never do that intentionally.

Another thing he mentioned was the use of the accessory chest, abdominal and arm muscles, and

bringing them into play in assisting in the delivery. Most of my patients beforehand demand that they have as much relief during labor as possible, so they are rather somnolent, to say the least, at the time of delivery; therefore, I do not get the benefit of those. In fact, I just do not believe that they ever help very much, particularly the arm muscles. The uterine muscle is the only one in my patients that seems to cause progress in labor.

Occasionally a simple thing like distended bladder or rectum will materially prolong labor, in which case it is frequently terminated rapidly following catheterization and soapsuds enema.

I certainly enjoyed Doctor Buchner's paper.

DR. B. F. TURNER (Memphis): In a recently published work on psychiatry, by Doctor Henry, he makes the observation in a short paragraph that instances of retarded development and defective development will be reduced in proportion as obstetrics is perfected. What he means, of course, is that in the process of birth the infant is subjected to particular injuries which have effects either immediate or remote, his emphasis being placed upon remoteness. Of course, those injuries that are incidental to delivery, injuries to the infant, which are gross, are in most cases evident at the time, but often it happens that a child apparently normal will pass through babyhood and arrive at school age and be found defective in its ability to learn otherwise, and as it goes forward in its physical growth show its main deficiency. This, Doctor Henry means, is the result of certain things that occurred when the baby was born, and that is apropos of the discussion of our essayist this afternoon and has been touched most interestingly by Doctor Peterman in his first paper in the Pediatric Section.

I have nothing to add to what has already been said about dystocia when the problem is presented before the oncoming head has been engaged in the pelvis, but once the head of the infant is engaged in the pelvis, every pain that the uterus accomplishes is pressing down upon the brain with a relatively terrific force, and if it is allowed to remain there too long, what Doctor Peterman in his contribution referred to as edema and anoxemia of the cortex may occur, and if it does the effects of it may appear next year or six years later or ten years after the baby's birth.

What can we do to avert this calamity? What can the obstetrician at the hour of delivery do to prevent a defective youth or man, perhaps, with a defective character? In my judgment, this he can do: terminate the labor as quickly as that can be accomplished without injury to either the mother or the babe. In my experience the commonest cause of delayed labor is malpresentation. As I read textbooks on obstetrics the data which are submitted do not agree with my experience at all. That is to say, occipitoposterior presentations, in my experience, have been vastly more frequent than the data which the textbooks submit indicate.

Therefore, the infant is liable to this injury that Doctor Peterman suggested in the first paper this afternoon, and edema of the cortex, anoxemia which is the result of the pressure upon the baby's head, should be relieved. I know of no other way of relieving it that compares with the skillful use of the obstetrical forceps. If I could suggest anything to the teacher of obstetrics in the medical school, it would be that amongst the most important things that he could impart to the student would be such knowledge as is practical in the use of the obstetrical forceps. The obstetrical forceps, in my opinion, were never invented for the purpose of pulling on anything, to drag the baby into the world—not at all, but in these cases of occipitoposterior presentation the forceps properly adjusted can be so manipulated, very gently, without any dragging process at all, so as to assist the rotation of an occipitoposterior presentation into the anterior position, and then delivery occurs spontaneously. I do not know one operation in obstetrics, I do not know one manipulation which seems to me to transcend that in value. Assist the proper rotations of the head. I know of no way of doing that that compares with properly adjusting the obstetrical forceps.

That is all that I have to suggest, but having been engaged for many years especially in the psychiatric branch of medicine and having had to deal with defective children, with students who could not learn, with behavior problems, I suspect that Doctor Henry in writing his book is right, that if we improve our manipulations of obstetrics and assist the child into the world without damage to the cerebral cortex, which damage in many, many cases—I do not pretend to say all—is due to

pressure, we lessen the probability of the defective and the retarded growth which is such a calamity.

DR. E. F. BUCHNER, JR. (closing): I appreciate this constructive discussion very much. I am sure we all agree there is much room for improvement and perfection in both the art and the practice of obstetrics. It would seem as though the occipitoposterior is, as usual, the main concern in any discussion of prolonged labor. In selecting a picture of dystocia I described the last one I encountered. The delivering of an occipitoposterior as such is a different thing. That may be the best way out of another difficult situation. The anthropoid, narrow pelvis, with a head that is molded down long and hard, occasionally makes it very difficult to rotate. You may not be able to do it manually, even if you push it up as high as you dare. The membranes are often ruptured, the muscle of the uterus is contracted around the small parts of the fetus, and it is very difficult to push it up, and certainly hazardous if you go farther than just a little bit. At times a Scanzoni is difficult, and the Scanzoni has been abandoned by a good many because it may produce direct injuries at the time when you are trying to rotate the head through the pelvis that is narrow from side to side. In such situations I do believe that a little larger perineal laceration resulting from the direct occipitoposterior delivery is by all odds much safer than risking the more serious damage to the child's brain.

I believe that the general fear of an arrested occipitoposterior will be reduced as we learn to meet it with a consideration of all the things with which we may have to contend before the patient goes into labor. I thank you.



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H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### BASIC SCIENCE BILL

It is a pleasure to announce that the Senate passed the basic science bill Wednesday, February 5, by a vote of nineteen to three. Today, February 6, the House passed it by a good majority. It is now ready for the governor's signature. There is no reason to doubt that he will affix his signature promptly. Thus this wholesome measure will become a law.

Every form of opposition to the passage of this bill was encountered. Chiropractors opposed it. Osteopaths opposed it. Subterfuge was used and we don't know what else.

A great many people are entitled to credit for this result. Doctors throughout the state informed their senators and representatives and solicited their cooperation. This was most effective. We were fortunate this year in one particular. Dr. R. L. Dossett of Tullahoma represents the eighteenth senatorial district in the Senate. He

is chairman of the reference committee on public health and sanitation. The basic science bill was referred to his committee. Dr. W. H. Stallings of Friendship is a member of the House from Crockett County. He is chairman of the reference committee on public health and sanitation in the House to which committee this bill was referred. These two men are entitled to a great deal of credit for their diligence, effort, and leadership in securing the passage of this bill.

Senator A. N. Fuller of Gallatin and Lawrence Morgan of Brownsville were kind enough to introduce the bill and sponsor it in the Senate. In the House, the bill was introduced by Louis Allen of Nashville, Geo. W. Yost of Springfield, Frank Hall of Dickson, and Dr. W. H. Stallings of Friendship.

Of course, the Legislative Committee was active at all times. The president of the Association was most active. The president and secretary are ex officio members of the committee. The members of the committee who live in Nashville are expected to take the burden of legislative matters, notwithstanding the fact that other members of the committee who reside in other parts of the state were willing and helpful at all times.

It is deemed appropriate to make the observation at this time that medical leadership in the legislative halls of this country is becoming increasingly essential. The time was when many doctors served in the Senate and House of the state. They served in the Congress of the United States, but the number has diminished. We are fearful that the results have been bad. Doctors must be called upon to make whatever sacrifices that are essential to maintain at least an intelligent viewpoint of medicine on the floors of the legislative halls of this country and doctors of the state are entitled to credit for having made such a sacrifice in the present instance.

### SYPHILIS AMONG DRAFTEES

Active syphilis is now a cause for the rejection of an applicant for military service.

The Wassermann test is made routinely as a part of the final examination given all applicants. The results of the tests made on 120,000 draftees have just been announced by Dr. R. A. Vonderlehr of the United States Public Health Service. The findings are, in brief, as follows: 5,000 cases of active syphilis were found among the 120,000 draftees. The diagnosis, "active syphilis," is based upon the positive Wassermann test and clinical evidence.

A tabulation of the figures by states brings out some interesting revelations. The states are divided into four groups according to the incidence of syphilis found among draftees. In group 1, with an average rate of seven cases per 1,000, are North Dakota, Minnesota, Wisconsin, Rhode Island, Nebraska, and Utah.

In group 2 are the states with an average rate of nineteen cases per 1,000. They are Wyoming, Michigan, Colorado, New Jersey, Ohio, Montana, New York, and Kansas.

In group 3 are the states with an average rate of sixty-one cases per 1,000. They are West Virginia, Oklahoma, Maryland, Tennessee, North Carolina, and Alabama.

In group 4 are Georgia, Louisiana, Mississippi and Florida, with an average rate of 114 per 1,000.

It is common knowledge that the incidence of syphilis is much higher in the colored race. The extent to which this fact has bearing in determining the rate of syphilis in the southern states is not stated. They are interesting and revealing figures.

Mr. Paul V. McNutt, Federal Security Administrator, in a recent statement said: "It is made clear that the control of syphilis is a 'home front' problem for the simple reason that the active cases are not accepted for military service. They are sent back to resume their relationships in the civilian populations.

It is our understanding, of course, that the draftee who is rejected is informed as to the cause of his rejection. These 5,000 cases are informed as to their conditions. The extent to which they are public health problems is determined by the extent to which they address their energies to getting well. The case which takes proper

treatment is not a public health menace. Those who do not take the proper treatment are a public menace.

It would be of interest to determine just what the attitude of these 5,000 individuals is toward treatment and how they react to their responsibility to themselves and their communities.

Facilities are available in many communities for free treatment and certainly facilities are available in every community for the treatment by private physicians.

The work done by examining boards in connection with the military service at the present time affords a fine opportunity to ascertain the prevalence of the disease in the various communities throughout the United States.

Opportunity is afforded also for applying some definite procedure looking to the proper control of those who are so neglectful of their own interest and the interest of their communities as to neglect or refuse to take the treatment that is available.

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#### POSTGRADUATE WORK

A great deal of postgraduate work is done by and for the medical profession of Tennessee. Much of this work is done on the initiative of the doctors themselves. A great deal of it is done, or made possible, by the Commonwealth Fund of New York in cooperation with the medical schools and the State Health Department.

One cannot overestimate the value of the postgraduate course in obstetrics which was completed two years ago and the course in pediatrics just completed. These were in a sense experimental projects to determine if postgraduate work can be carried to the doctors in their respective communities. The conclusion by all is that such work is a success. A course in internal medicine is soon to begin.

It is appropriate to mention the postgraduate work through medical publications and through society meetings both local and state.

The Pneumonia Control program now in progress is another outstanding example. All these constitute a vast amount of work in the field of postgraduate study and teach-



ing. It has made better doctors and thereby made for better medical care.

Another form of postgraduate work is now offered at Vanderbilt University Medical School in Nashville. Scholarships for the course are made available by the Commonwealth Fund. A statement on this subject is contained in the following announcement.

#### ANNOUNCEMENT

A series of postgraduate courses for general practitioners in rural communities will be available again at the Vanderbilt University Medical School to physicians of Tennessee. Courses of one month's duration each will be given in medicine, surgery, pediatrics, and obstetrics. The courses in medicine and surgery will be given concurrently during the first month, and in pediatrics and obstetrics during the second month. Thus, it will be possible to secure two courses, either medicine or surgery, the first month, and pediatrics or obstetrics the second month. Additional courses may be taken in subsequent years. The dates for the courses of 1941 are as follows:

Medicine and surgery, June 16 through July 15. Pediatrics and obstetrics, July 16 through August 15.

Holders of fellowships will be provided with tuition and certain travel expenses, and in addition will receive a monthly stipend of \$250. Those who are interested are advised to apply directly to the Commonwealth Fund, 41 East Fifty-Seventh Street, New York City, for application blanks and further information. Physicians who are interested should make immediate application.

HOWARD MILTENBERGER, *Registrar,*  
*School of Medicine,*  
*Vanderbilt University.*

## DEATHS

#### DR. G. L. WILLIAMSON

Dr. G. L. Williamson, Jackson; Vanderbilt University, School of Medicine, Nashville, 1904; aged sixty; died January 6, 1941.

#### DR. J. M. OLIVER

Dr. J. M. Oliver, Portland; Vanderbilt University, School of Medicine, Nashville, 1911; aged fifty-four; died January 11, 1941.

#### DR. K. S. HOWLETT

Dr. K. S. Howlett, Franklin; Vanderbilt University, School of Medicine, Nashville, 1881; aged seventy-nine; died January 22, 1941.

#### DR. J. S. CAMPBELL

Dr. J. S. Campbell, Lebanon; Vanderbilt University, School of Medicine, Nashville, 1888; aged seventy-eight; died February 3, 1941.

## RESOLUTIONS

#### DR. G. L. WILLIAMSON

Once again the grim spectre of death has invaded the ranks of the Madison County Medical Society and struck down one of our most valued members. Dr. G. L. Williamson, after a life of usefulness and service to his fellow men and to his community, passed away on January 6, 1941, following an illness of several months. Doctor Williamson was a native of Madison County, and, after taking his preliminary education in the schools of Jackson, was graduated as Doctor of Medicine from Vanderbilt University in 1904 at the age of twenty-three years.

His first practice in Jackson was in association with Dr. J. T. Barbee, another fine physician, who left us a few years ago for California. Doctor Williamson's whole life was centered in his profession. He only allowed himself an occasional day of recreation as a hunter in the fields or as an attendant on various games in the stadium. He loved horses and dogs and at times would exhibit his horses at the Jackson Fair.

He was genial, kindly, and lovable in his association with his friends and his loyalty to his patients won for him their constant and enduring affection.

After serving on the staff of the Crook Sanatorium for several years in 1928, he, conjointly with Dr. Charles F. Webb, erected the Webb-Williamson Hospital, which has been eminently successful from the beginning. When his health failed he transferred his interest to Doctor Webb, his partner in the hospital, but continued to maintain his offices there and to use the institution for his practice.

Doctor Williamson was successful financially as well as professionally, which is a unique distinction for a physician. His death is a great loss to our profession and to the community.

The undersigned committee, on behalf of the Madison County Medical Society, extends its deepest sympathy to the family of Doctor Williamson, and is sending a copy of these resolutions to them and also a copy to the *Jackson Sun* and to the TENNESSEE STATE MEDICAL JOURNAL for publication.

(Signed) JERE L. CROOK,  
HERMON HAWKINS,  
CHAS. F. WEBB,

*Committee from the Madison  
County Medical Society.*

#### RESOLUTION AND TRIBUTE TO DR. FRANK B. EASLEY

On December 29, 1940, the Chattanooga and Hamilton County Medical Society lost one of its youngest members in the tragic death of Dr. Frank B. Easley. He had been a member of the society for about a year and a half.

He was born near Tunnel Hill, Georgia, on his father's farm, January 17, 1901.

He received his early education at Tunnel Hill, Georgia, and his A.B. degree at Mercer University, Macon, Georgia, in 1923. He then attended Harvard Medical School and on his graduation received a competitive three-year appointment in general surgery in a Harvard teaching hospital in Boston.

After leaving Boston, Doctor Easley returned to his native county of Whitfield and practiced general medicine for six years at Dalton, Georgia, where he was vice-president of the Medical Society.

In 1936-37, he received a Master of Science degree in diseases of the eye from the University of Pennsylvania and was awarded an appointment for two years as house surgeon at the New York Eye and Ear Infirmary.

After qualifying himself thoroughly for his future work, Doctor Easley located in Chattanooga, Tennessee, where he was making good, about a year and a half ago, and began practice as an eye specialist.

Doctor Easley was well known and liked in Dalton and Chattanooga. He was considered a physician with a brilliant future. He was thorough and painstaking in his work.

He is survived by his parents, Mr. and Mrs. Charles Easley, of Tunnel Hill, Georgia, and his young son, Conrad Harlan Easley, age six months; a brother, Dr. Sam Easley, a dentist in Dalton; and other close relatives.

*Therefore Be It Resolved*, That the Chattanooga and Hamilton County Medical Society deeply deplores the passing of Doctor Easley.

*Be It Further Resolved*, That we extend to his bereaved father and mother our sincere sympathy and condolence, and that a copy of these resolutions and preamble be sent to his father and mother, a copy be spread upon our record book and a copy be sent to the Tennessee State Medical Society.

E. S. BLAIR, M.D., *Chairman*.

J. B. STEELE, M.D.

R. M. COLMORE, M.D.

F. B. STAPP, M.D.

CLEO CHASTAIN, M.D.

J. A. GENTRY, M.D.

L. B. BROOKS, M.D.

Approved this 16th day of January, 1941.

WM. J. SHERIDAN, M.D.

J. MARSH FRERE, *Secretary*.

#### NEWS NOTES AND COMMENTS

Dr. Gilbert J. Levy announces the removal of his office from 26 South Dunlap to 188 South Bellevue, Doctors Building, Memphis, Tennessee.



Dr. A. T. Sikes announces the removal of his office to Suite 516, Doctors Building, Nashville.

Drs. Horace C. Gayden and L. Ruben Gayden announce the removal of their offices to Suite 444, Doctors Building, Nashville.

## WOMAN'S AUXILIARY

President-----	Mrs. W. T. Braun
Memphis	
President-elect-----	Mrs. W. W. Potter
Concord	
Press and Publicity-----	Mrs. H. B. Brackin
Nashville	

With ground-hog day behind us, and an early spring forecast, we are beginning already to look ahead to our annual state meeting of the State Medical Association, April 8, 9, and 10. Let us begin now to make plans to attend. Mrs. W. T. Braun of Memphis, our state president, will have a program of unusual interest for all of us, and here in Nashville, Mrs. Cleo Miller, general chairman of arrangements for the convention, is already busy working out plans, and will be assisted by the following able committee: Mrs. Lynch Bennett, Mrs. H. B. Brackin, Mrs. B. F. Byrd, Mrs. George Carpenter, Mrs. Horace Gayden, Mrs. Hollis Johnson, Mrs. T. D. McKinney, Mrs. Theo. Morford, Mrs. Oscar Nelson, Mrs. J. C. Overall, Mrs. T. G. Pollard, Mrs. Elkin Rippy, and Mrs. W. W. Wilkerson.

Mrs. Fowler Hollabaugh is president of the Hostess Auxiliary. Watch the March issue of the JOURNAL for the complete program.

DR. A. S. MOFFATT TALKS ON EXPERIENCES  
IN CHINA DURING RECENT  
JAPANESE WAR

Dr. A. S. Moffatt, until recently of Kiangyin, China, was the guest speaker on the program of the Woman's Auxiliary of the Rutherford County and Stones River Academy of Medicine meeting Friday afternoon

at the home of Mrs. M. B. Murfree on North Maney Avenue. Miss Mary Roberts Murfree was cohostess with Mrs. Murfree.

Doctor Moffatt is a former resident of Murfreesboro, having been resident physician at Rutherford Hospital for two years. He is on sabbatical leave from his duties as a medical missionary to China and is temporarily practicing in Shelbyville, taking the place of a local physician on leave.

Doctor Moffatt's talk was on some of his late experiences in Asia at the outbreak of the war with Japan. Having spent his early years in China, he mentioned that during his thirteen-year absence when he was receiving his formal education in the United States, conditions had very radically changed in China, due to the influence of Western civilization. Many of the old customs, he said, had given way to the newer, more modern methods of the Western Hemisphere.

In describing the destruction that the Japanese army had brought to China, the speaker said that his hospital and nearly all of its equipment had been destroyed in the march on the invading army. After the attack on Shanghai, his family, along with thousands of Chinese, were pushed into the interior of China, where he again set up a makeshift clinic in a Buddhist temple and treated the wounded and war stricken.

"The war has caused many vitamin deficiency diseases in China," he said, "particularly beriberi. The Chinese are a most remarkable race in being able to exist on the barest of necessities and to carry on their way of life in spite of grave danger in the face of destruction.

“The ones who have suffered the most financially on account of the war are the American businessmen with large interests in China. Many of the evidences of progress that started on the eastern coast are being moved, however, into the interior of the great oriental country, where they are temporarily out of the reach of the attacking Japanese.”

Doctor Moffatt was introduced by the program chairman, Mrs. M. B. Murfree.

The brief business session was presided over by the president, Mrs. J. A. Scott.

Following the program the hostesses served a refreshment plate.

Visitors to the meeting were Mrs. J. W. Huggins, Mrs. Moffatt, Mrs. James Clayton, Mrs. Watt Smith, Mrs. E. W. Williams, Mrs. Harry Gannaway, Mrs. C. E. McCarthy, and Miss Cornelia Murfree.

The president announced that the next meeting would be held at the home of Mrs. J. R. Gott, with Mrs. Sidney Smith as joint hostess.

## MEDICAL SOCIETIES

### *Blount County:*

Officers elected for the year 1941 are as follows:

Dr. J. F. Manning, President; Dr. C. B. Lequire, Vice-President; Dr. Lea Callaway, Secretary-Treasurer.

The society meets every Thursday night at 8:00 o'clock at Fort Craig Hospital.

On January 2 Dr. E. H. Lowe's paper was on the "Treatment of Burns." Dr. L. C. Olin opened the discussion.

On January 9 Dr. R. B. Wood, Knoxville, discussed "Pneumonia Control Program of the Tennessee State Medical Association."

Other meetings this year have essayists and subjects as follows:

January 16—"Dental Caries," by Dr. N. E. Morris.

January 23—"Alcoholism," by Dr. J. F. Manning. To open discussion, Dr. J. E. Carson.

January 30—"Skin Eruptions — Children," by Dr. Beulah Kittrell. To open discussion, Dr. J. F. Manning.

February 6—"The Ministry and the Physician," by Dr. J. B. Bernardin, Mr. D. W. Poage introducing.

February 13—"Reduction of Blood Pressure," by Dr. Murlin Nester. To open discussion, Dr. W. C. Crowder.

### *Davidson County:*

January 14—"The Uses of Adrenalin in Allergic Conditions," by Dr. Herman Spitz. Discussion by Dr. Edna Pennington.

Case report: "Pedunculated Osteoma of External Auditory Canal," by Dr. W. G. Kennon.

January 21—"Carcinoma of the Bladder," by Dr. Henry Douglas. Discussion by Dr. Horace Gayden.

Case report: "Solitary Cyst of Kidney," by Dr. Elkin Rippy.

January 28—"The Principles of Treatment of Carcinoma of the Cervix," by Dr. John C. Burch, Dr. G. S. McClellan, Dr. Herbert Francis, Dr. H. K. Brask, and Mr. Arthur Omberg. Discussion by Dr. H. S. Shoulders.

February 4—"Symposium: Pneumonia—Tennessee State Pneumonia Control Committee"—Dr. O. N. Bryan, Dr. E. L. Turner, Dr. W. R. Cate, and Dr. J. O. Manier.

### *Dyer, Lake, and Crockett Counties:*

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session Wednesday, February 5, 1941. The following scientific program was well attended and very instructive:

"Management of Burns," by Dr. J. D. Biles, Jr., Memphis.

"Vomiting in Infants and Children," by Dr. W. L. Rucks, Memphis.

"Chemotherapy of Pneumonia," by Dr. R. E. Ching, Memphis, and Dr. Otis Warr, Jr., Memphis.

(Signed) C. L. DENTON,  
Secretary.

### *Hamilton County:*

January 16—"Explanation of the State Pneumonia Program," by Dr. Tim J. Manson.

January 23—"Back Pain" (moving pictures and slides), by Dr. Chas. L. Scudder, Boston, Massachusetts.

January 30—"Indications for Stomach Resection," by Dr. R. Van Fletcher.

"Morkazo Ointment in Treatment of Burns" (moving picture), by Dr. Wm. G. Stephenson.

February 6—"Present-Day Treatment of Pneumonia," by Dr. W. E. Bryan.

"Pneumonia," by Dr. James L. Bibb.



Paper scheduled to be read on February 13 is "Primary Carcinoma of Lung," by Dr. John B. Haskins. Moving picture of anterior pituitary-like substances.

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*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

The Five-County Medical Society met in Waynesboro on January 28. The following papers were read:

"Technique of Prostatic Resection," by Dr. B. C. Arnold, Jackson. Discussion opened by Dr. George Williamson, Columbia.

"Pneumonia Control Program of the Tennessee State Medical Association," by Dr. J. O. Manier, Nashville.

"Perforated Peptic Ulcer," by Dr. Glenn Batten, Jackson. Discussion opened by Dr. Leo Harris, Lawrenceburg.

Dr. L. W. Edwards, president of the Tennessee State Medical Association, was present and discussed the "Basic Science Bill."

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*Henry County:*

The Henry County Medical Society met in the county courtroom of the courthouse at Paris, Tennessee, February 7, 1941, at 2:30 P.M. The following officers were re-elected for the year 1941:

Dr. A. F. Paschall, president; Dr. Elroy Scruggs, vice-president; Dr. R. Graham Fish, secretary-treasurer; Dr. R. Graham Fish, delegate to the state meeting; and Dr. George D. Boone, alternate.

(Signed) R. GRAHAM FISH, M.D.,  
Secretary.

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*Knox County:*

January 14—"Pneumonia — Drug and Serum Therapy," by Dr. E. R. Zemp.

January 28—"Infectious Mononucleosis," by Dr. Ralph H. Monger.

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*Robertson County:*

The Robertson County Medical Society met in regular session at the Robertson County Hospital, January 21, 1941, with the following members present: Drs. W. S. Rude, W. W. Winters, C. M. Banks, W. B.

Dye, J. R. Connell, J. S. Freeman, J. S. Hawkins, A. R. Kempf. Visitors were Drs. O. N. Bryan and Charles Trabue of Nashville, Dr. Sam Fentress of Goodlettsville, and Dr. J. M. Harris of Thomasville.

The entire program time was given to Doctor Bryan, who gave a detailed discussion of the etiology, diagnosis, and treatment of pneumonia, with special reference to sulfathiazol and sulfapyridine.

(Signed) JOHN S. FREEMAN, M.D.,  
Secretary.

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*Sullivan-Johnson Counties:*

The Sullivan-Johnson County Medical Society met in Bristol on Wednesday evening, January 8, 1941.

Dr. Tom Kuhnert read a very interesting paper on "Affections of the Shoulder," taking up the more traumatic and congenital conditions.

Dr. Edward T. Brading of Johnson City, representing the Tennessee Pneumonia Control Committee read a prepared paper on the management of pneumonia with the newer sulfonamide group of drugs.

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At the monthly meeting of the Sullivan-Johnson County Medical Society held in Kingsport on February 5 the Bristol and Kingsport doctors ran a neck-and-neck race for attendance honors. There were twelve present from each city.

Following the customary dinner at The Inn, the program committee presented a forty-minute motion picture showing in detail the technique of regional anesthesia.

The next meeting will be held in Bristol on March 5, 1941.

(Signed) D. D. VANCE, M.D.,  
Secretary.

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*Washington, Carter, Unicoi Counties:*

At the meeting held February 6, Dr. Herbert Acuff of Knoxville, Tennessee, addressed the society on the subject, "Surgical Treatment of Tuberculosis." Discus-

sion by Doctors Wofford, Monroe, and Shipley.

Dr. Edward T. Brading, Johnson City, Tennessee, read a paper on "Pneumonia and Pneumonia Control Program in the State of Tennessee."

The scientific program was preceded by a dinner at the hotel in Johnson City, Tennessee.

There were forty-five members and guests present.

(Signed) H. B. CUPP, M.D.,  
*Secretary.*

## OTHER MEDICAL SOCIETIES

The twelfth annual session of the Southeastern Surgical Congress will be held in Richmond, Virginia, on March 10, 11, 12, 1941. Headquarters, John Marshall Hotel.

The following physicians from Tennessee will appear on the program: Dr. Willis C. Campbell, Memphis; Dr. Elkin L. Rippey, Nashville; and Dr. Robert L. Sanders, Memphis.

A meeting of Region II of the American Academy of Pediatrics in Richmond, Virginia, will be held on April 24 and 25.

### ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, DECEMBER 6, 1940

1. Case Report: "Arteriovenous Aneurysm," by Dr. John M. Dougall.

Patient is a sixty-eight-year-old white male in rather severe cardiac failure. He received a gunshot injury in the right thigh at the age of twenty-five. At the time of examination signs of an arteriovenous aneurysm were present over the lower right thigh. Radiographic examination of pelvis and thighs revealed an extensive arteriosclerosis which made possible visualization of the caliber changes of the vessels in the right femoral region and actual visualization of the aneurysmal sac. Pertinent points from the literature are noted.

This case was discussed by Dr. Herbert C. Francis.

2. "A Common Self-Created Eruption," by Dr. Howard King.

American dermatologists call it neurodermatitis. An attempt is made to accurately describe and define the conditions. A psychoneurogenic background exists in all these cases. Various environmental conditions are discussed. Descriptions of different types of individuals are given. Both physical and mental causes are briefly discussed.

Allergy plays very little part in these cases; any attack along that line usually proves fruitless. When the physical and mental background is thoroughly explored and the problem attacked from this angle, good results are often obtained. X-rays and other local remedies are discussed. The aid of the psychiatrist, the gynecologist, or the internist may be needed.

This paper was discussed by Drs. W. S. Leathers and Frank H. Luton.

3. "Fat Emboli," by Drs. W. de Gutierrez-Mahoney and Homer Swanson.

Fat emboli occurred in fifteen per cent of sixty routine autopsy brains (those affected by vascular disease and sepsis), in all of five patients dying after cerebral trauma, and in the brains of dogs which showed mild signs of cerebral injury following trauma. It is felt the fat originated from ruptured cerebral myelin.

Fat injected into the carotid arteries appears in the cerebral veins. Cerebral fat emboli are dangerous when they so overwhelm the vascular bed that there is delay in transit. So oxygen should be supplied during the period of passage to help to maintain the necessary cerebral nourishment.

This paper was discussed by Dr. Max Little and Lieutenant Commander F. R. Haselton.

### ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, JANUARY 3, 1941

1. Case Report: "Renal Rickets," by Dr. Jack Hild.

A one-year-old white female infant was brought to the hospital because of retarded



development. After the age of eight months very little food had been ingested and there had been progressive weight loss. On admission the weight was nine pounds. Examination revealed extreme malnutrition, moderate acidosis, anemia, and normal serum calcium with marked phosphorus and nitrogen retention. Roentgenograms showed calcification of the major vessels of the extremities, decalcification of all bones, and diffuse extensive mottling of both lungs with deposits of calcium. The diagnosis was renal hyperparathyroidism.

This case was discussed by Drs. H. C. Francis and Ann S. Minot.

2. "The Aging of the Population and Its Relation to Medical Science," by Dr. Paul M. Densen.

Aging of the population, *per se*, will bring about an increase in chronic diseases and a decrease in the communicable diseases of childhood. While there will not be any great increase in the case load over that to be expected from the increase in population, services rendered by physicians and hospital will tend to be somewhat greater.

This paper was discussed by Drs. Tinsley Harrison and Horton Casparis.

3. "The Influence of Stimulus Strength and Duration on the Responses from Cortical Stimulation Through Implanted Electrodes" by Drs. James W. Ward and Sam L. Clark.

A brief history of the development of the technic used in electrical stimulation of fixed points on the cortex cerebri of unanesthetized and unrestrained animals was presented. Responses elicited in contralateral extremities were found to be constant when the primary and secondary factors affecting the results were controlled. Primary factors were shown to be length and strength of stimulus and interval between successive stimuli while secondary factors, related to posture (tonic neck reflexes, position of responding limb, labyrinthine reflexes, etc.) were found equally significant in reproducing a response. In considering the response, its quantity, pattern, and latency were considered.

This paper was discussed by Dr. Cobb Pilcher.

## COMING MEETINGS

American Medical Association Session, Cleveland, June 2-6, 1941. Dr. Olin West, Secretary, 535 North Dearborn Street, Chicago, Illinois.

Southern Medical Association, Thirty-Fifth Annual Meeting, St. Louis, Missouri, November 11-14, 1941. Mr. C. P. Loran, Executive Secretary, Empire Building, Birmingham, Alabama.

Tennessee State Medical Association, Nashville, April 8-10, 1941. Dr. H. H. Shoulders, Nashville, Secretary.

Region II of the American Academy of Pediatrics, Richmond, Virginia, April 24 and 25.

The Postgraduate Surgical Assembly of the Southeastern Surgical Congress, Richmond, Virginia, March 10, 11, 12, 1941. John Marshall Hotel. Dr. B. T. Beasley, Secretary-Treasurer, 701 Hurt Building, Atlanta, Georgia.

The New Orleans Graduate Medical Assembly, Roosevelt Hotel, New Orleans, March 3-6, inclusive. Dr. R. M. Willoughby, Chairman, 1430 Tulane Avenue, New Orleans.

Medical Association of Alabama, Mobile, April 15-17.

Arkansas Medical Society, Little Rock, April 14-16.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Evipal Soluble by Rectum as a Basal Anesthetic. Samuel Borssuck. *Anesthesia and Analgesia*, November-December, 1940.

The author reviews 114 cases of basal anesthesia by the use of evipal soluble per rectum. The author's interpretation of basal anesthesia is a state of unconsciousness to such a degree that the patient is unaware of the events incident to his removal from his bed to the operating room and of the administration of the supplemental anesthesia.

There was used a ten per cent solution in distilled water and the dose was calculated at two-tenths cubic centimeter per pound of body weight; 78.9 per cent were satisfactory and 21.1 per cent were unsatisfactory. In the satisfactory cases there was required on the average 34.3 minutes for the production of sleep and the duration averaged four hours and fifty-three minutes.

Sleep was not produced in fourteen per cent, while 3.6 per cent had agitation and excitement, and 3.6 per cent showed reaction enough to prevent operative procedures. Blood pressure, pulse, and respiration are not appreciably effected in those

that react favorably, but in those who have a sensitive respiratory center and are subject to cardiovascular abnormalities there may occur alarming symptoms such as respiratory depression, drop in blood pressure, and rapid pulse. Profuse perspiration, nausea, vomiting, and mild agitation are not considered contraindications.

## FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Hyperpyrexia as an Adjunct in the Treatment of Non-surgical Urological Conditions. James E. Potter, Francis H. Redewill, and E. G. Longley. *Journal of Urology*, 37: 1: 214, January, 1937.

Methods of therapeutic pyrexia fall into the following groups: (1) inoculation of infective organisms: malaria, relapsing fever, rat-bite fever; (2) protein shock therapy: injections of milk, egg albumin, T. A. B. vaccine, tuberculin, staphylococcal vaccine, bacillus coli vaccine, etc.; (3) injection of chemical agents: e. g., sulphur in oil; (4) hot baths of all kinds: electric light, steam, infrared light, hot air, hot water, mud—that attempt to throw heat from without into the body of the patient; (5) internal electrical methods: bipolar, such as diathermy and short wave, and magnetic such as inductotherm.

The average number of treatments of the gonorrheal cases and complications were six, and the number of days between treatments averaged five. The height of the temperature attained rectally was greater in the cases of acute gonorrhea, acute gonorrheal epididymitis, and acute and chronic prostatitis than in other forms of gonorrheal infections. One of us has observed that women respond more readily to fever at lower temperatures than men. In fact, it is dangerous to submit women to very high temperatures because they will be going along apparently very fine at 105.5 degrees Fahrenheit and then suddenly faint as in a case reported by Desjardins. The number of cases of acute gonorrheal epididymitis was twenty-six. All were cured rapidly with temperatures ranging from 104 to 107 degrees Fahrenheit. We treated thirty-one cases of chronic posterior urethritis, but the hyperpyrexia did not produce any striking results due probably to heat-resisting organisms and spores located in the prostatic urethra. Twenty-nine cases of acute and chronic prostatitis were treated with temperatures of 105 to 107 degrees Fahrenheit and three cases developed epididymitis. The fever heat treatment in these cases shortened the course of the disease and period of massage.

There is hardly any more striking therapeutic effect than the hyperpyrexia in gonorrheal arthritis. Fever heat here is a specific for that condition and all cases show rapid improvement and remarkable cures, even in cases that have had the

disease a year or more. No therapeutic agent can take the place of hyperpyrexia in this type of gonorrheal infection. Fourteen cases of cervicitis cases responded remarkably well with eleven cures. However, three cases were so far advanced that they developed salpingitis in spite of the fever heat applications. In these cases the tubes were probably infected before the hyperpyrexia was given. The six cases of chronic cystitis and urethritis, female, all were cleared up with temperatures not over 105 degrees Fahrenheit, with an average number of treatments of five. Six cases of gonorrheal skin lesions were treated with hyperpyrexia along with other medication. Two patients had acne of the buccal area of the face, female, who had previously been treated for years to clear up the facial condition with no results. General hyperpyrexia therapy such as cured cases of gonorrheal infection quickly cured the facial acne. Two cases of gonorrheal keratosis of long standing were cured, one with six treatments, and the other with eight. We have treated 189 cases with the inductotherm and cabinet, and the number of treatments, 1,001. There were serious reactions in three cases, exemplified by heat exhaustion. There were no deaths.

## CONCLUSIONS

Various agents for producing therapeutic fever have been discussed. Physical agents used for the production of therapeutic fever are of two classes: (1) those operating in media higher than the body temperature, and (2) those operating in a media lower than the body temperature. The former is not considered physiologically as desirable as the latter. The biophysical action of the latter in which the heat is generated in the body, the lessened shock-producing elements involved, the added comfort of the patient, and the consistently lower pulse rate that occurs when prolonged high temperature levels are maintained by application of electromagnetic induction in the cool cabinet places it as our choice of method.

## INTERNAL MEDICINE

By R. B. WOOD, M.D.  
By D. R. THOMAS, M.D.  
Medical Arts Building, Knoxville

Sulfapyridine Therapy in Pneumonia: A Discussion of Apparent Failures and Complications. F. E. Smith, Jr., M.D.; Richard Riley, M.D.; and Oswald R. Jones, M.D., New York, New York. *Annals of Internal Medicine*, December, 1940.

A review of 122 cases treated with sulfapyridine revealed eight deaths—rate of 6.5 per cent—and in addition seven other cases failed to show a good clinical response to chemotherapy. Forty-nine per cent were over forty and five per cent of the eight deaths were over forty.

Bacteremia occurred in 13.8 per cent with two deaths. Undesirable results of therapy noted were: nausea, sixty-eight per cent; vomiting, fifty-nine per



cent; drop in hemoglobin, six per cent; and hematuria, ten per cent. Each of the fatal cases is discussed.

**Sulfathiazole in the Treatment of Pneumococcus Pneumonia.** V. B. Callomon, M.D., and W. E. Goodpasture, M.D., Pittsburgh, Pennsylvania. *Annals of Internal Medicine*, December, 1940.

From published articles one may gather sulfathiazole is more soluble than sulfapyridine and more rapidly absorbed; the maximum blood level arrives in two hours and is maintained for four to six hours. There is also less acetylated portion and it is less toxic to mice, rats, and monkeys.

Toxic manifestations are occasional impairment of renal function, hematuria, nausea, vomiting, dizziness, drug fever, rash, and ocular congestion. Mild but no serious blood dyscrasias have been noted.

Fifty cases of pneumonia treated with sulfathiazole are reported with mortality rate of eight per cent—2.9 per cent in nonbacteremic and 18.8 per cent in bacteremic groups. Three of the deaths occurred in the seventy to seventy-nine age group.

No direct relation between blood level and clinical response was noted. Azotemia was observed in two cases. No other serious effects were noted.

**The Problem of Pneumonia with Reference to Chemotherapy and Serotherapy.** Perrin H. Long, M.D., and James W. Haviland, M.D. *Annals of Internal Medicine*, December, 1940.

In 1939, Long and Wood reported the case fatality rate of pneumococcal pneumonia at Johns Hopkins Hospital as 7.2 per cent using serum and sulfapyridine or a combination of both.

One hundred ninety cases admitted in 1940 are analyzed, consideration being given to age group, presence of concomitant disease, bacteremia, etc.

The routine peroral dosage for either sulfapyridine or sulfathiazole was: initial dose four grams followed by one gram every four hours until temperature had been normal twenty-four hours. Fifteen deaths occurred, a fatality record of 7.9 per cent, as compared to 7.2 per cent during 1938-1939. Eight deaths occurred in the group treated with sulfapyridine and one with sulfathiazole. Three received both drugs and two received serum and sulfapyridine.

They conclude the two drugs are equally efficacious with sulfathiazole, causing less nausea and vomiting. Patients severely ill should receive both types of specific serum and either sulfapyridine or sulfathiazole.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

**Normal Variations of Fetal Heart Rate During Pregnancy.** Lester Warren Sontag and Helen Newbery. *American Journal of Obstetrics and Gynecology*, 449: 452, September, 1940.

Of the limited number of criteria which are available for judging the state of well-being of the fetus during pregnancy and labor, the rate and variations of rate of the fetal heart are usually considered among the most important. There are two reasons for the stress laid upon fetal heart rate as an indicator of the condition of the fetus. Perhaps the first reason is that it is one of the few physiologic phenomena of the fetus which may be observed accurately and at will. Second is the fact that fetal distress in the form of anoxemia is widely believed to manifest itself earliest through a change in cardiac rate.

The analysis of 18,517 half-minute samples of fetal heart rate on sixty-three normal fetuses ranging throughout the last five lunar months of pregnancy shows that rates of 160 or more beats per minute are common. Rates below 120 beats per minute are, on the other hand, unusual. Rates below 100 were not found in the author's group. Marked fluctuation in rate is frequently found. Charts accompany the paper. Increase in fetal heart rate above 160 per minute occurs so frequently during the two months preceding labor that occurrence during labor seems little justification for assuming fetal distress. Marked fluctuations in rate are common during the last two months of pregnancy in normal fetuses. Since rates below 100 were not found in our group, it seems justifiable to conclude that low rates are, as a rule, the direct result of the effects of labor. High rates occur normally during the latter months of pregnancy and should be interpreted with caution when found during labor.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Problem of Diabetic Retinitis.** Herman Elwyn. *Archives of Ophthalmology*, January, 1941.

Diabetic retinitis cannot be explained on the basis of retinal arteriosclerosis or chronic hypertension even when these conditions coexist. The hemorrhages and exudates which constitute diabetic retinitis can be explained as a result of local circulatory disturbances in the retina. Hemorrhages result when the terminal vessel units are in a certain definite state of dilatation, with a corresponding slowing of the blood flow—prestasis, in the terminology of Ricker. A condition of prestasis in the retina must be assumed from the presence

there of the hemorrhages. When the state of prestasis persists for a given length of time, the corresponding part of the retina receives an insufficient food and oxygen supply. As a result, hyalin is deposited in the tissues of the retina, and lipoids become visible. The problem of diabetic retinitis narrows down to the question: What is responsible for the dilatation of the terminal vessels and the state of prestasis in the retina?

A tentative suggestion may be offered. Diabetes mellitus belongs to a group of diseases which is characterized by the loss of stability of the mechanism for the maintenance of a physiologic norm. In the case of diabetes it is the mechanism which maintains the blood sugar level which is at fault. The result is an unstable and increased sugar level in the blood. All the secondary metabolic changes are due to the consequent loss of sugar with its attendant loss of glycogen reserve in the liver. The persistently increased sugar level in the blood affects the terminal vessel units in an unknown manner to cause dilatation. The resultant slowing of the blood flow constitutes the condition of prestasis with its attendant hemorrhages into the retina and is responsible for the eventual deposit of hyalin and lipoids.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Sulfathiazole and Sulfapyridine in the Treatment of Pneumonia in Infancy and Childhood. Stewart C. Wagoner, M.D., and William F. Hunting, M.D., Cincinnati. *The Journal of American Medical Association*, 116: 267 (January 25), 1941.

The authors studied 109 patients with pneumonia, fifty-five of whom received sulfathiazole and fifty-four sulfapyridine. The cases were carefully selected to assure comparable groups as to age, severity, and duration of pneumonia and the time at which drug therapy was started. For comparison the dosage of the drug was varied from time to time to maintain in both groups a blood concentration of the drugs of four to six milligrams per 100 cubic centimeters. The majority of the patients were started on one grain of sulfapyridine per pound of body weight and one and one-half to two grains of sulfathiazole per pound of body weight. Half the calculated dose for twenty-four hours was the initial dose, and thereafter the drug was given every four hours until the rectal temperature had remained below 100 degrees Fahrenheit for seventy-two hours.

There was one death of a patient treated with sulfapyridine. There was no significant difference in the two groups as to the time of the fall in temperature or the time at which there was clinical recovery.

Unsatisfactory response to the drug occurred in two patients in the sulfathiazole group and eight

patients in the sulfapyridine group. There was one relapse in the sulfathiazole group and two relapses in the sulfapyridine group. In one patient the disease was uninfluenced by sulfathiazole. It is suggested that a change might be made from one drug to the other in those instances in which a significant fall in temperature fails to occur within forty-eight hours after therapy is started.

Empyema developed in one patient after an initial good response to sulfapyridine. In the sulfapyridine group five patients developed nonsuppurative otitis media and three developed suppurative otitis media. In the sulfathiazole group only one patient developed a complication, nonsuppurative otitis media.

Vomiting was the chief toxic symptom noted. This occurred in eighteen patients treated with sulfathiazole and in thirty-four patients treated with sulfapyridine.

Microscopic hematuria was noted in one patient receiving sulfathiazole and in none receiving sulfapyridine.

No cases developed hemolytic anemia. One patient in each group developed leukopenia. The leucocyte counts returned to normal promptly on discontinuance of the drug.

In one patient cyanosis developed after administration of sulfathiazole, but after the administration of sulfapyridine it developed in three patients.

From this study the authors conclude that sulfathiazole is as effective as sulfapyridine in the treatment of pneumonia. They noted no marked toxicity from either drug administered over an average period of five days.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
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Lipoid Pneumonitis. B. R. Kirklin. *Radiology*, Vol. 35, No. 3, p. 261, September, 1940.

Since 1920 it has been known that oil injected into the lungs is capable of producing a pneumonitis. The major contributions to the literature are briefly reviewed, most of them having been published since 1932. Seventy-two cases of lipoid pneumonitis, which were proven by autopsy, have been reported. Not only may mineral oils cause this effect, but vegetable oils and even fat particles accidentally reaching the lungs in attempts at feeding during gastrointestinal upsets, may cause pneumonia or other types of pneumonitis. Among the fats and oils that have been shown to be productive of lipoid pneumonitis are liquid petrolatum, vaseline, milk fat, lard oil, cod-liver oil, egg yolk, chaulmoogra oil, and olive oil. While it is true that both vegetable and mineral oil may produce the condition, workers agree that vegetable oils are less apt to produce lipoid pneumonitis than mineral oils.



While it is true that the condition occurs more frequently in children and adults that are weak and debilitated or who have defects that make swallowing difficult, it is also true that other individuals are sometimes affected.

The descriptions of the pathology of lipid pneumonitis are comparatively uniform. It affects predominantly and often exclusively the central and lower portions of the lungs, especially the basal, circumhilar, and paramediastinal segments of the lower lobes. The disease is almost always bilateral, but the earliest involvement is apt to be on the right.

The pathologic process begins in the alveoli. The particles of lipid material are invaded by phagocytes, which envelop the particles and solidify the material. Often the phagocytes break down and other phagocytes take up the lipid particle. Subsequently the lymph channels are involved and obstructed and lymph nodes are involved. Marked fibrosis ensues, bronchioles are constricted, and corresponding alveoli dilate or collapse.

In time, rounded or ovoid tumorlike masses develop, which are clearly defined. Areas of bronchopneumonia may develop and small pleural effusions may also appear.

In uncomplicated cases, signs and symptoms may be meager and often perplexing. Cough is common and may be productive or nonproductive. Slight hemoptysis frequently occurs. The patients are afebrile. Rales are usually heard and local dullness may be made out, but the physical signs are not pronounced in proportion to the extent of the disease. When bronchopneumonia complicates the disease, the rise in temperature, dyspnea, cough, and physical signs are characteristic of pneumonia, but do not suggest the concomitant lipid disease.

The roentgen appearance of the lungs vary considerably with the stage of the disease.

In early, mild, uncomplicated cases, flecklike shadows appear in the basal and central portions of both lower lobes, often predominating on the right and sometimes involving the right middle lobe. The flecks extend to the periphery of the lung, and the entire appearance, which Davis thought was best described by the term "miliary mottling," is logically attributable, as he suggested, to the alveoli with their thickened walls and phagocytosed lipid contents. With further advancement of the disease, the bronchovascular-lymphatic markings become more accentuated and nodulated; and, in severe cases, gross, irregularly-shaped, rather dense, discrete, and confluent shadows of consolidations are interspersed through the region. Eventually, in chronic and severe cases, there is striking evidence of fibrosis, with strand-like shadows along the bronchovascular trunks, together with dense, sharply defined, irregular or rounded shadows, varying in size, number, and distribution, but often largest or most numerous in the hilar regions.

# SUMMARY

That aspiration of fats and oils into the lungs may give rise to a special variety of pneumonitis was determined experimentally as early as 1920, but only in recent years has it been realized that lipid disease of the lungs occurs sufficiently often to make it a relatively important pathologic and clinical entity, and the number of cases reported is steadily increasing. Almost any oil, whether derived from mineral, animal, or vegetable sources, may produce the disease, but because of its wide employment, liquid petrolatum is most often responsible. Dysphagia from any of its numerous causes is a common contributing factor.

Pathologically, the disease is characterized primarily by its peculiar localization, in that it affects predominantly, often solely, the basal and paramediastinal portions of both lungs. Masses of phagocytes invade the collections of oil in the alveoli, penetrate the alveolar walls, enter and obstruct the lymphatic vessels, and form tumefactions like paraffinomas. Fibrosis with variable degrees of contraction constitutes the final stage. At any stage, bronchopneumonia from infection may be added.

Symptoms and physical signs of mild uncomplicated lipid disease are meager, but the roentgenologic manifestations accurately reflect the morbid anatomic changes. When bronchopneumonia is superimposed, the lipid factor is likely to be overlooked both clinically and roentgenologically. The five cases of lipid pneumonitis here reported briefly are representative. One case was confirmed by necropsy.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.

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The Indication for Splenectomy in the Association of Anemia and Splenomegaly. Abraham O. Wilensky, M.D. *Surgery*, 9: 99 (January), 1941.

Certain conditions where there is a hypochromic anemia with splenic enlargement or associated hemolytic destruction of the red blood cells react favorably to splenectomy. Such cases are divided into three groups:

Group 1. Cases in which the indication for splenectomy is sharply defined and which a permanent good result can be expected. A case of familial hemolytic jaundice is reported in which splenectomy gave excellent results. Here the basic pathologic change is in the red blood cells. These are different in size and shape, are smaller, thicker and spherical, and the cell assumes a biconvex appearance instead of the normal biconcave morphology. These microspherocytes are diagnostic of this condition. Other findings such as increased fragility of the red blood cells, splenomegaly, stimulation of the bone marrow to emit normoblasts,

nucleated red cells and immature white blood cells, icteric tinge to sclera and skin aid in making a positive diagnosis.

During a crisis in hemolytic jaundice, conservative treatment is advised, such as iron, high caloric diet, and repeated transfusions. Splenectomy is the treatment of choice, but should be done only in the latent periods.

Thrombocytopenic purpura, in which there are hemorrhages into the skin and from mucous membranes, shows a more or less constant depletion of the platelets. Splenectomy is indicated only in the long-standing chronic cases and should be done if possible during a period of remission. An illustrative case is presented in which splenectomy resulted in a permanent cure. It is suggested that even in a crisis where hemorrhage cannot be controlled by conservative measures, splenectomy will cause an almost immediate cessation of bleeding.

Group 2. Cases in which the indication for splenectomy is a symptomatic one and is justifiable in order to relieve the tendency to bleed, but in which the underlying disease is uninfluenced by removal of the spleen. A case is presented in which there was present a definite bleeding tendency, an enlarged spleen, and a diminished platelet count. A preoperative diagnosis of thrombocytopenic purpura was made. After operation an anatomical diagnosis of Gaucher's disease was made from the microscopic appearance of the spleen. This patient, however, was relieved of the tendency to bleed.

Group 3. Cases in which the indication for splenectomy is a doubtful one and the outcome unpredictable and the operation is done in the absence or the unavailability of any more conservative form of therapy. Such a case was that of a seven-year-old boy who had repeated gastrointestinal hemorrhages and the spleen was greatly enlarged. The diagnosis was either Banti's disease or thrombocytopenic purpura. Sections of the spleen after operation showed signs of possible leukemia. The patient made an apparently complete recovery from the former symptoms. The indication for splenectomy in Banti's disease is an empiric one.

It is concluded in this paper that the indication for splenectomy in such cases exists when: (1) in a person with hemolytic icterus, spherocytes are demonstrable in the blood, and (2) when in purpuric conditions the number of platelets is at a very low level.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
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Pelvic Symptoms of Urinary Tract Origin. Preston T. Brown, M.D., and John W. Pennington, M.D. *Journal of American Medical Association*, January 18, 1941.

Lower abdominal pain and backache is usually erroneously interpreted by the patient, and many

times by the doctor, as due to ovarian or uterine diseases. Many of these symptoms are not due to pelvic disorder, but are the results of orthopedic defects, gastrointestinal disturbances, or urinary tract pathology. Hunner has been emphasizing the important relationship between obscure pelvic symptoms and urinary tract disease for many years.

Ureteral stricture and kinks, contracture of the vesical neck, chronic urethritis, trigonitis, and occasionally ptosis of the kidney may simulate pelvic disease.

Cases of dysmenorrhea following parturition are frequently found to be due to urinary tract disease.

Many women with neurotic symptoms have been cured after finding and relieving pathology of the urinary tract.

Ureteral strictures have been found to cause indigestion, chronic constipation, and flatulence.

Patients with vague abdominal and pelvic complaints, who have had prolonged pelvic treatment, appendectomies and pelvic operations without relief, are almost certain to have some urinary tract disease.

A careful history for any slight frequency, dysuria, or nocturia is important in these cases.

On examination, tenderness is frequently illicit over the ureters where they cross the brim of the pelvis or over the kidneys.

Urinalysis, as a rule, is of little value. Many cases show no pathology in the urine, and others only a few white blood cells, red blood cells, and bacteria. Only a complete urological checkup will reveal the true condition present.

These authors report eight cases in this article illustrating the various urological diseases associated with patients of the above complaints.

A correct diagnosis of obscure abdominal and pelvic symptoms require the correlation of a carefully taken history with a complete gynecological and urological examination, including X-rays and cystoscopy.

## BOOK REVIEWS

*Principles of Surgical Care, Shock, and Other Problems.*

Alfred Blalock, M.D., Professor of Surgery, Vanderbilt University School of Medicine, Nashville. 308 pages. 13 illustrations. Price, \$4.50. St. Louis: C. V. Mosby Co., 1940.

Surgical literature has for some time felt the need of a discussion of recent researches influencing the care of surgical patients. In this book considerable space is devoted to the phenomenon of surgical shock or, as it is better termed, peripheral circulatory failure. The clinical and experimental aspects of the subject are clearly and adequately presented. There is an excellent summary of the various theories of shock, as well as the practical applications of this new knowledge.



The author states that it was his original intention to limit his monograph to a discussion of shock, but that it soon became apparent that it could not be adequately considered without a discussion of a number of other conditions which might contribute to the development of peripheral circulatory failure. For this reason further chapters are devoted to the principles and recent advances in metabolic and nutritional disturbances. These include recently emphasized vitamin deficiencies and hypoproteinemia. Special problems of the diabetic and patients with hypertension and nephritis are considered. The more common pulmonary, abdominal, and urinary complications are discussed and their prevention and treatment outlined. In reading this book from the pen of the new surgeon-in-chief of the Johns Hopkins Hospital, one has the advantage of a scientific approach to the problem of surgical care, which has been developed by fifteen years of constant painstaking experimentation in the Department of Surgery at the Vanderbilt University School of Medicine. It is a helpful, usable addition to the library of any surgeon.

J. B.

Modern Dermatology and Syphilology. S. W. Becker, M.D., Associate Professor of Dermatology and Syphilology, Kuppenheimer Foundation, University of Chicago, and M. E. Obermayer, M.D., Assistant Professor of Dermatology and Syphilology, Kuppenheimer Foundation, University of Chicago. 847 pages. 461 illustrations. 32 full color plates. \$12.00. Fabrikoid. Philadelphia: J. B. Lippincott Co., 1940.

The authors have compiled a well-written volume on most of the skin diseases found in the United States, Canada, and Great Britain. It is practicable and designed to meet the needs of the student and general practitioner, but is a valuable textbook for the specialist in cutaneous diseases.

It is modern in every respect. Methods and diagnosis and treatment that have become obsolete are mentioned briefly or omitted altogether.

Each chapter is introduced by an explanatory note under the title, "Orientation," in the intimate language of a demonstrator to students.

The methods of teaching at the University of Chicago Clinics have been emphasized in this issue. The treatment of functional dermatoses is given in much detail.

Drug eruptions are listed according to cutaneous disorder, giving drugs that may cause such a disorder. Therapeutic preparations are listed alphabetically. Various branches of allergy and occupational dermatoses are discussed freely.

A comprehensive chapter is devoted to the diagnosis and modern treatment of syphilis. A treatment chart conceived by Van de Erve and amplified by Ginsberg is included in the volume.

A short bibliography is appended to each chapter, including most of the articles of the past five years, and many other articles that were thought to be of interest.

This volume is edited in a very interesting, readable manner, and is considered one of the most up-to-date and complete books of its kind in existence.

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## **PSEUDO SINUSITIS\***

**EUGENE ORR, M.D., Nashville**

It is not the purpose of this paper to discuss the treatment of sinus disease in any of its phases. An effort has been made to separate the sinus from the nonsinus case and to point out some of the conditions which may be confused with sinus disease. A few cases are presented to show the seriousness of advising surgery without sufficient evidence. The term "sinus disease" is loosely used. It has supplanted the "catarrh" of yesteryear; in fact, the term sinus disease has gone further and is often used to include not only all nasal disorders, but headache from any cause. The headache patient is too often the victim of "buck passing" or a loosely-made diagnosis of sinus disease or eyestrain. Given headache as the chief symptom, a thorough general physical examination is more important than any sort of special examination. History is a very important part. I suppose all of us are at times guilty of the same thing which possessed the Arkansas farmer who, when a book agent trying to sell him a book on farming, asked if he did not want to know how to do better farming, replied that he was not then farming as well as he knew how. It does not take any sort of special examination to convince oneself that many of these patients do not have sinus disease. Often a history together with a

general examination will suffice. In making a nose and throat examination in such patients I feel that it is best to take a brief history, then inspect the nasal cavities, nasopharynx, etc., then complete the history. In this way time can be saved and a more intelligent history obtained, as the color of membrane, presence of discharge, congestion or atrophy of tissues are extremely significant.

Aside from this group of obviously non-sinus cases, there is another group in which sinus disease is seriously suspected, and even in this group of suspected cases many do not have sinus disease. I am well aware of my own limitations as to diagnostic acumen, but in my own mind at least I feel that I have made a sincere effort to separate the sinus from the nonsinus group. It is true that a sinus infection may be associated with those conditions which simulate sinus disease.

In this paper I am not discussing those cases in which we are able to demonstrate sinus disease or in which we feel that the existence of sinus disease is questionable.

In taking up the question of suspected sinus cases, I selected 310 representative case histories. In differentiating the sinus from the nonsinus we must rely upon history, repeated examination of the nose, nasopharynx, etc., X-ray studies, diagnostic irrigation, and the use of a radiopaque fluid

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roid therapy he was entirely relieved. Another case is that of Mr. B. He had been told by several doctors that he had chronic sinus disease. His chief symptoms were stuffy nose and headache (the headache was more or less constant). The discontinuance of nasal medication did not improve him to any appreciable extent. X-rays were entirely negative. His basal metabolic rate was minus twenty-three. He was put on thyroid therapy. Several months later he reported that he had only an occasional headache and had not had a stuffy nose since beginning the treatment. Symptoms which make us suspect these milder hypothyroid cases are: easily fatigued, sensitivity to thermic changes, nervousness, irritability, menstrual disorders, and subnormal afternoon temperature. In view of the clinical evidence that has been offered by many writers, one certainly should feel justified in the judicious use of thyroid therapy in these cases with a minus basal metabolic rate.

We feel that many of these cases are the result of metabolic disturbances and do not hesitate to prescribe vitamins more or less empirically in all cases where the status is undetermined. I feel that many are benefited. This is particularly true in cases with a history of frequent colds or recurrent acute sinusitis.

In conclusion, I hope that I have not appeared too critical. Certainly I make too many mistakes to assume such an attitude. For instance, one of my "busts" with Mrs. M., who has been a patient of ours since September, 1929. Her chief symptom was headache which, as a rule, was associated with a stuffy nose and usually confined to the right frontal region. There was a high deviation of the nasal septum on the right side of moderate degree. Report of X-ray examination was that right antrum was cloudy. We were unable to confirm the X-ray diagnosis. Various nonsurgical procedures were tried without much effect. In September, 1933, we did a submucous resection, following which she was improved for about two years. As her symptoms increased in severity they assumed the rather characteristic symptoms of a right-sided

frontal sinus. For my part, I was seriously considering the advisability of a frontal sinus exploration in spite of negative X-ray findings. After fussing along for several months we had a basal metabolic rate run; it was minus fifteen. She was referred to her family doctor for thyroid therapy, and to date she has only had an occasional headache. We have not been able to relieve all of these cases—not by any manner or means; however, the treatment of sinus disease is in bad enough repute as it is, so let us at least reserve the diagnosis of sinus disease for actual sinus cases; and in answer to that often implied question "once a sinus always a sinus," may I suggest that, in many instances, there never was a sinus.

#### DISCUSSION

DR. R. G. REAVES (Knoxville): Doctor Orr has presented an excellent paper on a much-discussed subject among the laity. It is amazing how many patients come to the otolaryngologist complaining of sinus trouble. They know all about the disease, having taken many lectures on the subject at bridge parties. I have often thought it would be nice to be a proctologist, as patients would hesitate to discuss symptoms, operations, or show scars.

Doctor Orr has shown us how careful one must be to make a correct diagnosis in some cases. A patient with iritis, arthritis, or neuritis with any suspicion of infected sinuses should have every diagnostic means known to us used to establish the fact that there is or is not infection present. A patient with a mechanical obstruction may have a deviated septum or enlarged cystic turbinate, causing nasal blocking, excessive nasal secretion and headache, and have no infection whatever in the sinuses. The same may be true with allergic patients, patients with disturbed metabolism, and those who eat excessively in starchy foods. Some pseudo-sinusitis cases are good candidates for sinusitis, and when they get acute infection they do not clear up as readily as those with normal noses.

I do not know that there is anything in Doctor Orr's paper that I disagree on. I would like to know why he prefers boiled tap water instead of distilled water for his saline base. I doubt very much that a nose used to the dirty, smoky atmosphere of Nashville, Chattanooga, or Knoxville would ever detect the slightest difference. At this point I would like to add that a nose breathing in air laden with smoke and dust needs an excess of secretion in order to cleanse itself and protect the lower respiratory tract. Hence, we have the catarrhal noses which the individual frequently diagnoses as sinusitis.

In closing, I wish to compliment Doctor Orr on his excellent paper and say that if all the otolaryngologists would work out their cases as carefully as Doctor Orr, there would be less criticism. Furthermore, I wish to say that I know of nothing in our profession that is more satisfactory than a case of sinusitis properly diagnosed and properly treated.

DR. EUGENE ORR (closing): I wish to thank Doctor Reaves for coming down and discussing this paper. I explained that it is no work of mine that boiled tap water does not interfere with the ciliary action of the nasal mucosa, whereas the saline made from distilled water does. I have to accept somebody else's word for that, but I do believe that the patients, particularly where you do a displacement and use a rather large amount, say one-half or one-fourth ephedrine in normal saline, complain less from boiled tap water than distilled water.

I will agree with Doctor Reaves. I feel we can cure most cases of sinus disease, but the other cases are entirely different, and I think the bad repute sinus surgery has gotten into is due to the fact that some of these cases that never did have sinus disease were diagnosed and operated for sinus disease and the trouble has gone along.

A number of these cases complain of a sticky postnasal discharge, not the crusty formation, but a sticky discharge. Look out for excess of starch, particularly wheat starch. Leave them off of wheat flour for ten days or two weeks, experiment a little bit, and some of those cases will clear up.

Another thing that is almost pathognomonic is an alternating nasal obstruction—worse at night, worse during the winter. They have two things, a hypertrophy of the posterior tips of the inferior turbinates which can be relieved very easily, and added to that they have a house dust allergy. That is almost pathognomonic.

There is a type of case I would like to say something about, and that is what I call spitters. You look in the mouth and there is nothing but frothy material in the nasopharynx, in the mouth, back of the throat, everywhere. They come in with a whole box of Kleenex and they are spitting all the time. They are usually unmarried women around the age of the menopause or after. I will defy anybody in the world to take a history from one. You think you are going to get your questions answered and they say, "And—er," and are gone again. I think all those cases are due to some sort of endocrine disturbance.



## THE PLACE OF VITAMINS IN THERAPY\*

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In the current enthusiasm for vitamins considerable confusion has arisen regarding their use in treatment. This is due to rapid progress which has made it difficult to keep abreast of new developments, to the difficulty of transferring knowledge from the laboratory to clinical medicine, and to the multiplicity of names, units, dosage, preparations, and mixtures. Furthermore, the laudable desire to offer to patients the benefits of new discoveries in treatment has led to the uncritical use of vitamins in many diseases, unsupported by accurate knowledge of the need, indication, or results of such treatment. Only the fact that vitamins possesses no, or almost no, potentiality for harm has protected us against serious error on a large scale.

In spite of these difficulties it should be possible by a careful analysis of the problem to determine the place of vitamins in therapy. Vitamins are normal substances which are required by the body to maintain the health of the tissues and participate in vital functions. Other than this they have little or no action in the body and the only way in which they are concerned with disease is by being deficient or lacking. It is obvious then that all we can expect to do with vitamins is to supply a normal demand and prevent or correct a deficiency.

The real problem is to determine when a deficiency exists or is likely to occur. This is not altogether an easy matter. While simple enough in the fully developed deficiencies such as scurvy and pellagra, it is much more difficult to diagnose the larger number of latent or subclinical deficiencies. Because of this, there is a tendency at present to treat all manner of disease in a hit-or-miss fashion in the hope that some good will be accomplished or that some disease, hitherto difficult of treatment, will respond to vitamins. This practice is foolish and wasteful. Instead of depending on blind

chance, our efforts should be directed toward the accurate diagnosis of such deficiencies as may exist and their relief by the specific treatment indicated.

Before proceeding to a consideration of the use of the individual vitamins, certain general features of treatment should be discussed. Treatment with vitamins is of two kinds: preventive treatment to protect against the occurrence of a deficiency and curative treatment to relieve a deficiency when it is present. Preventive or protective treatment is more effective than in the case of most diseases. The indications for such preventive treatment are clear and it is possible to select groups of patients who require protective treatment. These groups vary with the different vitamins, as I shall describe later.

A second general principle in treatment with vitamins concerns the use of purified vitamins. In general, the more natural the source of the vitamins the better. The reason for this is obvious. We know much about vitamins, but we do not know all about them. We do not know what may be lacking when dependence is placed solely on highly purified vitamins to the exclusion of unknown factors in foods. Neither do we know much about the interrelationship of vitamins or their relation to other constituents of the diet. On the other hand, we do know that a liberal, well diversified diet will supply all necessary food elements and maintain normal nutrition. The practical significance of this is that whenever possible reliance should be placed on natural food sources. The order of use is food itself first, then concentrates of natural food substances, or substances closely related to food such as yeast, fish oils, wheat germ, etc., and lastly, pure vitamins. This applies particularly to protective or preventive treatment, or to the latter stages of curative treatment when the pure prep-

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arations are supplemented and later replaced by more natural concentrates and a proper diet. The fact, however, that food and certain concentrates contain more than one vitamin must not be taken as a recommendation for artificial combinations of pure vitamins, the use of which is in general to be condemned.

Vitamins needed in addition to diet should be given in adequate dosage based on standardized units and preferably by weight when that is possible. This need generally occurs in acute or advanced deficiency states or in stubborn chronic cases. When absorption is difficult parenteral administration may be necessary. Pure preparations are also required for a therapeutic test of diagnosis. When pure and very concentrated preparations are needed, however, care should be taken to avoid wasteful overdosage. At the present time great economic loss is occasioned by the use of excessive doses of pure vitamins, either because they are not needed or because they are continued beyond the time when other products and diet could be substituted. For example, it may be necessary and indeed highly advisable to administer nicotinic acid, even parenterally, to a critically ill, demented pellagrin with an ulcerated mouth, and a severe diarrhea. In a short time, however, most such patients can be placed on concentrates and later on proper food.

I turn now to a consideration of treatment with the individual vitamins. Vitamin A is essential for the integrity of the epithelial tissues generally and for the formation of visual purple. Deficiency leads to night blindness, xerosis and keratomalacia, dermatosis, and a keratinization of epithelial surfaces; for example, particularly in the bronchi of young children. Advanced forms of the deficiency are very rare in this country, though mild grades are probably common.

Among those needing special protection or supplements in addition to the diet are young children, pregnant and nursing women, patients with chronic infectious dis-

eases, such as tuberculosis, or suppurative surgical diseases, gastrointestinal lesions, or other diseases which interfere with the intake of food. For protective supplements the dose should be in the neighborhood of 6,000 to 8,000 international units. For treatment of the milder cases of deficiency, especially in the absence of disorders of absorption, similar doses will suffice, though somewhat larger amounts, up to 25,000 units, may be used in more severe cases to provide a margin of safety. With the exception of night blindness, it is doubtful if larger doses than these cause any quicker effect in ordinary cases. When difficulty in absorption or utilization is present or suspected, much larger doses must be used for prevention or treatment, even to 100,000-500,000 international units daily. This is particularly true in certain diseases such as celiac disease, diseases of the pancreas or in some diseases of the liver in which there appears to be much difficulty in utilization.

For protective supplements and ordinary treatment cod-liver oil has advantages for general use, among which are effectiveness, added food value, often smaller cost, and a closer approach to natural dietary conditions. Many persons object to cod-liver oil, however, and this form may be impractical, especially when large doses of vitamin are needed. Certain concentrates in tablet, capsule, and solution form are useful but care must be taken lest the unit value for each tablet or capsule is so low that excessive numbers of each are needed and the cost unnecessarily increased. The oil of certain fishes has the advantage of high potency in small volume, as much as 50,000 or 60,000 units per gram in some cases. In the case of children certain very concentrated solutions, though apparently expensive, may actually be relatively cheap by avoiding waste and insuring actual intake. Furthermore, cod-liver oil has the disadvantage of possibly causing lipoid pneumonia by aspiration in infants and young



children. In the case of children it is often advantageous to use preparations containing A and D, but with adults who generally need little D it is best to use A alone, or with minimal D, unless the latter is actually needed. Otherwise one may pay more than necessary for the added D. Carotene may be used in place of vitamin A if desired, but carotene is less readily absorbed and should be given in double the dose in units and is not advisable when difficulty in absorption exists. There are as yet no very suitable preparations of vitamin A or carotene for parenteral administration, but such is scarcely needed, even in cases with disturbances of absorption, if sufficiently large doses are given by mouth.

Vitamin B<sub>1</sub> or thiamin deficiency causes a beriberi, a disease seen only occasionally and sporadically in this country. Also it apparently is the cause of so-called alcoholic neuritis, the polyneuritis of pregnancy, and perhaps the polyneuritis sometimes seen in different infectious diseases. Besides this the deficiency may be responsible for certain cases of arthritic or neuritic pain, gastrointestinal symptoms such as anorexia, indigestion, gas, and constipation, and a nervous syndrome resembling so-called neurasthenia. However, these are incomplete manifestations of a slight or early deficiency and do not offer any characteristic differences from similar symptoms from other causes. Unfortunately, there are no good clinical diagnostic tests for these mild deficiencies as yet, and with the current enthusiasm for vitamins, especially this one, any and all symptoms which might conceivably be due to a deficiency of it are being treated with thiamin, most often without the slightest attempt to determine if a deficiency exists and in a blissful ignorance of the true diagnosis.

Modern diets tend to be low in thiamin and storage in the body is not very great. Those who should receive protective supplements include pregnant and nursing women, patients on restricted diets, those with infectious diseases whose food intake

is limited, patients with gastrointestinal disease, alcoholics, and some children. Curative treatment is indicated in those who present syndromes known to be due to a deficiency of thiamin and in those cases in which a careful analysis of the diet, symptoms, and physical findings indicate a mild deficiency of this substance. The latter will include certain mild cases of neuritis, indigestion, and perhaps otherwise unexplained congestive heart failure, but every effort should be made to establish a probable diagnosis before treatment.

The daily requirement of B<sub>1</sub> is probably in the neighborhood of one milligram daily, being greater in larger, more active individuals and less in smaller, less active persons. As is generally true, growing children require more in proportion to their size. One milligram is equivalent to 333 international units and a supplement of this amount should be adequate for protection or for the treatment of mild deficiency if adequate absorption is assured. For the more severe deficiencies, for outspoken polyneuritis, beriberi, and the like, doses of ten to twenty milligrams a day are probably adequate. There is some doubt as to whether larger doses are ever needed. There is evidence that the greater part of large doses is excreted, unchanged and unutilized, in the urine and stools. Large doses may occasionally be necessary when difficulty in absorption exists, in chronic cases or in severe acute cases such as beriberi with heart failure. There are also some other situations in which massive doses of B<sub>1</sub> are used in an experimental manner, but the status of such studies has not yet reached the point where conclusions can be drawn for general use.

For protective supplements products such as yeast, yeast concentrates, or similar preparations are to be preferred because such preparations are sufficiently concentrated for protective purposes and contain certain other members of the B complex which are often lacking when B<sub>1</sub> is inadequate. Dried yeast and concentrates will

furnish from 300 to 1,200 units or about one to four milligrams per *ounce*. Many preparations are available, but it is highly important to ascertain their potency and prescribe by units or milligrams rather than by tablets or teaspoonfuls.

For the treatment of the more advanced cases of the deficiency pure thiamin is preferred because the larger doses can be given more effectively in this manner. Treatment by mouth is ordinarily sufficient, but when there is difficulty in intake or absorption it may be given intravenously, intramuscularly, or subcutaneously. Solutions in ampoules are available for this purpose. It should be given separately, uncombined with other vitamins, because the larger doses needed make compound preparations too bulky or expensive and wasteful. It is ordinarily unnecessary to continue the large doses of pure thiamin longer than a week or two when they can be supplemented and replaced by diet and such concentrates as yeast.

Nicotinic acid is the principal, but probably not the sole vitamin concerned with pellagra. The clinical picture of pellagra is well known, but as in the case of B<sub>1</sub> incomplete or latent forms of the disease exist. These manifest themselves as disorders of digestion, such as mild diarrhea, nervous disorders ranging from those in a class with psychoneurosis to dementia, glossitis, stomatitis, and an atypical dermatitis. Again as in the case of vitamin B<sub>1</sub> no good clinical diagnostic tests are available for the mild forms and there has been an enthusiastic and uncritical use of nicotinic acid based on little diagnostic evidence.

The principal group requiring protective supplements of pellagra-preventive substances are those whose intake of an ordinary diet is interfered with. This includes particularly those on therapeutic diets and patients with gastrointestinal or other disease which limits intake or interferes with absorption. Those requiring curative treatment are patients who have pellagra or the

less fully developed manifestations of the disease.

For protective supplements the best preparations are yeast, or concentrates of yeast or similar substances. This is particularly true in the case of pellagra because of the probable multiple nature of the deficiency and the need to provide more than nicotinic acid alone. At the same time the multiple nature of the deficiency makes it difficult to express dosage in terms of any single substance. In general, good brewer's yeast in doses of an ounce or so a day, or equivalent amounts of similar substances, will suffice in most cases. In terms of nicotinic acid twenty-five to fifty milligrams are probably an adequate supplement in most cases, but because of the probable lack of the other substances in these cases pure nicotinic acid alone should not be used as a protective supplement except when absolutely necessary. For treatment of outspoken pellagra, however, or the more chronic deficiencies, nicotinic acid or nicotinic acid amide is to be preferred. Doses of 100 to 200 milligrams daily will be sufficient in most cases and unnecessarily large doses have been used too often in the past. Nicotinic acid amide is to be preferred to the nicotinic acid which causes an annoying erythema, itching, and burning, often with slight nausea, when individual doses exceed the individual's tolerance which is usually around fifty milligrams. The amide does not cause this unpleasant reaction. When possible it should be given by mouth and in solution. Tablets are available, but there is some evidence to indicate that absorption may be poor when tablets are used. If the nicotinic acid or amide cannot be taken by mouth, it may be given intramuscularly or intravenously dissolved in saline in a concentration of about one milligram per cubic centimeter. The daily dose should be divided so that not more than twenty to twenty-five milligrams are given at one time and administered slowly. Otherwise unpleasant reactions may follow.



Occasionally in severe and acute cases of pellagra or in stubborn chronic cases larger doses will be necessary. Most often, however, this apparent need for larger doses or the failure of the patient to improve with smaller doses is due to a failure to recognize that other factors than nicotinic acid are required. Patients with pellagra given nicotinic acid may improve, but if continued on the same deficient diet may cease to improve or may relapse. Larger doses of nicotinic acid may again help for a time, but again prove insufficient. In such cases the addition of other substances, such as riboflavin, either in the food or as additional supplements will make ordinary doses of nicotinic acid effective. For this reason patients should not be continued on nicotinic acid alone any longer than necessary before they are placed on other supplements such as yeast and a liberal diet rich in pellagra-preventive foods. In most cases it will be sufficient to give nicotinic acid or the amide itself for only a few days before the yeast and diet are added and soon thereafter the nicotinic acid can be discontinued. In stubborn cases it may be necessary to continue it longer and use larger doses, but in those cases riboflavin, yeast, yeast concentrate or similar substances should be added and a proper diet instituted as soon as possible.

Only occasionally will cases of deficiency of riboflavin alone present themselves for treatment. Although it is now known that riboflavin deficiency causes a cheilosis or inflammation of the lips, with fissures at the corners of the mouth and seborrheic lesions about the nose, the deficiency is seen most often in association with the pellagra syndrome. Because yeast, yeast concentrates and similar preparations, and pellagra-preventive foods are also good sources of riboflavin, the deficiency of this vitamin will usually be overcome as soon as the patient is placed on yeast or similar preparations and an adequate diet. If, however, the

patient with pellagra is treated solely with nicotinic acid, the lesions of riboflavin deficiency will not subside and nicotinic acid will, after a time, prove ineffective. It is for this reason that the patient with pellagra should receive, as soon as possible, concentrates and a liberal diet. In the occasional case of riboflavin deficiency, either isolated or combined with other deficiencies, which fails to respond to concentrates or a good diet, it may be necessary to reinforce the treatment with pure riboflavin. There is some reason to believe that these resistant cases are the result of difficulty in absorption or utilization peculiar to the individual. Pure riboflavin is available in tablet or capsule form, and is usually given in doses of two to five milligrams daily by mouth. Occasionally larger doses are necessary or parenteral administration must be used. For injection the vitamin may be dissolved in saline and given intramuscularly, intravenously, and subcutaneously. Unfortunately, it is very unstable to light and solutions should be freshly made. Riboflavin is often offered in combination with other vitamins, especially those of the B group, generally under the designation of vitamin G with the amount expressed in terms of Sherman Bourquin units. One Sherman Bourquin unit equals about .003 of a milligram, and if the daily need is estimated at one milligram some 400 Sherman Bourquin units would be required. Many preparations containing riboflavin have only fifty to 100 Sherman Bourquin units per ounce or equivalent so that to get a therapeutic dose excessively large amounts of the preparation would need to be given. In most cases these preparations are unsatisfactory and uneconomical to use when treatment with pure riboflavin is indicated. The indications for preventive or protective treatment are essentially the same as in pellagra.

Vitamin C is one of the vitamins which only occasionally needs to be given in pure form. Most cases of vitamin C deficiency are mild and respond readily to a good diet or to supplements of fruit and vegetable juices. For reasons already stated such treatment is ordinarily to be preferred to treatment with pure vitamins. Only in an occasional case when the administration of food or drink is difficult, in very severe cases of scurvy, or in subjects allergic to fruit or vegetable juices is it necessary to use the pure vitamin.

The minimum requirement of vitamin C is usually given as about twenty-five milligrams, but it is likely that for good health it should be considerably larger, fifty milligrams or more. Persons needing protective supplements are young infants, especially those fed artificially; patients with gastrointestinal disease, acute and chronic febrile illness, and thyrotoxicosis; patients on certain therapeutic diets; and those who cannot take an adequate diet. Vitamin C requirements are increased by physical exertion, fever, and increased metabolism. The storage of vitamin C is slight and the reserves of the tissues quickly exhausted. For this reason there is greater need for protective supplements in diseases of short duration, such as some of the infectious fevers, than in the case of some other vitamins.

Ordinarily protective supplements and even curative treatment is best furnished by fruit and vegetable juices which correspond to yeast and yeast concentrates for the B group and cod-liver oil for vitamins A and D. Good orange juice contains about 0.5 milligrams per cubic centimeter or fifteen milligrams per ounce so that four ounces a day will provide a good supplement or even a curative dose in many cases. Other fruit juices contain smaller amounts. Unfortunately, there may be considerably less on standing, especially in metal containers, and at room temperature, so recently prepared, fresh or canned juice

should be used. In some circumstances concentrated or dried juices reinforced with ascorbic acid may be used to advantage. While it is true that under some conditions pure vitamin C may be as cheap, milligram for milligram, as the same amount of fruit juice, the latter is to be preferred under most circumstances for reasons already given.

When pure vitamin C (ascorbic acid) is indicated it can be given by mouth in tablet form or in solution, or parenterally by vein or intramuscularly. Usually treatment by mouth is the best because of simplicity and because a considerable waste occurs by way of the urine when it is given parenterally. If injections are necessary, repeated small doses are better than single large doses because the level in the blood is not raised so high and less loss occurs in the urine. The intravenous route is preferable to the intramuscular because with the former it is not necessary to neutralize the solution if ordinary doses (200 to 300 milligrams) are given dissolved in ten to twenty cubic centimeters of saline solution. Pure vitamin C is an acid and if given intramuscularly, or intravenously in very large doses, it must be neutralized to avoid sloughs and other reactions. For curative treatment doses of 200 to 300 milligrams daily by mouth or parenterally are ordinarily sufficient. Occasionally larger doses may be needed, but if response is not obtained easily the diagnosis of vitamin C deficiency should be questioned. The use of the pure vitamin need ordinarily be continued only for a few days.

The use of vitamin D for the treatment and especially the prevention of rickets is familiar to most physicians. Only occasionally is it needed in adults. As a protective supplement it is indicated for nearly all infants and young children, particularly those who are artificially fed. It should also be given routinely to pregnant women and those who are nursing their babies to protect themselves as well as the children. If



this were done it would probably be unnecessary to protect breast-fed infants, but on the whole it is safer to give it to the latter as well. An additional group who may be given protective supplements are old people or others who are confined to the house and whose diet is apt to be inadequate.

Great care should be taken to prescribe vitamin D in adequate dosage according to units. With young infants protective treatment should be begun early in the third or fourth week with 200 international units increasing in a few days to 400 units and in another week to 800, where the dose may be held until about the third month, when it should be increased to 1,200 units for the rest of the first year. The second year it may be reduced to 800 units and it is well to continue this several years. All infants through two years should be protected. Susceptible infants, prematures, those with gastrointestinal and other diseases, and those confined indoors may require more, even 5,000 to 10,000 units or more. It is better to prevent rickets than cure it, but the first evidence of insufficient protection may be the appearance of early rickets.

Doses of protective size may cure rickets, but too slowly. Rickets should be cured rapidly and large doses may be needed. Not less than 1,200 units daily should be tried and 10,000 to 50,000 or more may be required in special cases. Failure to respond promptly, in three weeks or so, indicates inadequate dosage.

Confusion in the use of vitamin D is caused by the large number and different kinds of preparations which are offered. Cod-liver oil has the advantage and disadvantages already described under vitamin A. Good cod-liver oil contains at least 400 units of vitamin D per teaspoonful and one-half teaspoonful to three teaspoonfuls a day will be satisfactory in many infants and young children if aspiration can be avoided. In older children and when the

number of units required calls for too much oil more concentrated preparations should be used. Viosterol in oil furnishes 222 units per drop, but contains no vitamin A. Concentrated and fortified fish oils are equal to viosterol in oil and are also rich in vitamin A. Viosterol dissolved in propylene glycol mixes with milk and water and can be added directly to formulas. Vitamin D milk, bread, and breakfast foods are available, but have the disadvantage that the concentration of vitamin D may be so low that unduly large amounts must be consumed to secure protection. They should never be depended upon for treatment and should be considered critically for protection.

Adults require vitamin D and mild osteomalacia is more common than generally suspected, but in them the deficiency is usually partly vitamin D and partly calcium deficiency. Moderate-sized doses equal to three teaspoonfuls of good cod-liver oil a day will usually suffice. Vitamin D may also be used in mild cases of parathyroid tetany, not because they are specific, but because it promotes better calcium metabolism which may relieve very mild cases.

The use of other vitamins and possible vitamin presents special problems which cannot be discussed within the limits of this paper.

To summarize this discussion in any useful way would be impossible without unduly adding to its length. In conclusion let me emphasize again the following points. All we can reasonably hope to do with vitamins is to relieve a deficiency if one exists or prevent its occurrence. If none exists no effect is to be expected. The indication for the use of vitamins is the evidence of a deficiency or the expectation that a deficiency may develop. Every effort should be made to diagnose a deficiency or the likelihood of one by history, examination, and laboratory tests, and when use is made of a therapeutic trial of diagnosis it must be interpreted critically and honestly. Preference should be given to an adequate diet, con-

centrates or similar preparations of natural food, and pure vitamins in the order named. Vitamins should be prescribed in adequate doses, expressed in proper units, preferably by weight when that is possible. Pure vitamins should ordinarily be given individually for specific, well-understood purposes, by mouth if possible, but parenterally when indicated.

Only by attention to these principles can treatment with vitamins be practiced with the scientific honesty that should apply to all treatment and distinguishes the true physician from the charlatan.

#### DISCUSSION

DR. JACK CHESNEY (Knoxville): Doctor Youmans has given an excellent and very practical discussion of vitamins, stressing the known facts and fortunately omitting the unscientific speculation which has surrounded the use of vitamins for the past fifteen or twenty years. I believe that perhaps the pediatricians are the most vitamin-minded of all physicians because in years past the pediatrician has come in contact with the most outspoken clinical cases of vitamin deficiency. More than forty years ago the American Pediatric Society rendered a report which if followed would have absolutely eliminated infantile scurvy long ago. Since that time there has been great progress in the knowledge of scurvy, culminating in the discovery of vitamin C about 1931 or 1932. Also during this period there has been a tremendous expansion of the citrus fruit industry in this country, in California, Texas, Florida, and elsewhere, so that fresh citrus fruits and juices are available in every part of the United States at cheap cost. Despite these facts numerous infants still develop scurvy.

Investigation has shown us that almost all infants at the present time who develop scurvy are being fed on evaporated milk. That is no reflection on evaporated milk, but it merely shows us that this type of milk, prepared by prolonged heat treatment, is almost devoid of vitamin C. These infants fall into two or three groups. In the first place, there are those whose mothers are so ignorant that they have never heard of orange juice or other juices being given to infants. Fortunately, that group is smaller every year. The second group comprises those infants who for some therapeutic purpose had the juices taken from the diet; for example, the child with diarrhea or a rash which perhaps was due to orange juice. When the child became well the mother did not resume giving the

juice, and after a varying length of time the child developed scurvy. The third group, which apparently should not occur, is that group of infants who have actually been given some sort of fruit juice every day of their lives and yet every day have vomited that juice. Such a child, of course, is in the same category as the child who has never had any at all. In this latter group and the group deprived of vitamin C because of some therapeutic purpose, the disease could be prevented by the use of the pure vitamin in the form of ascorbic acid.

The point I want to make is that in spite of all the propaganda for the use of citrus fruits that we have had in the last few years, scurvy still does occur.

As Doctor Youmans has mentioned, the premature baby is very difficult from the standpoint of prevention of rickets. As a matter of fact, some authorities state that until the introduction of viosterol or of highly concentrated fish oils, all prematures developed rickets, perhaps 100 per cent. I believe that you are all familiar with the premature some two or three months of age, very plump, with a rachitic head, bones as soft as a derby hat, deformed chest, knobbed ribs, and so on. Unfortunately, because of their delicate nature, these children cannot be taken into the sun where they might receive the actual sunshine vitamin.

The rickets of prematures begins during the first ten days or two weeks. The dose must be anywhere from two to five times that of the dosage for a full-term infant; that is, at least 2,000 to 4,000 units of vitamin D, or more. This would mean from fifteen to thirty drops of viosterol or from twenty to forty drops of the various concentrated fish oils. I do not believe that it is possible to prevent rickets in the premature by the use of ordinary unconcentrated cod-liver oil, because the volume of oil necessary to furnish the required amount of vitamin D would exceed the infant's digestive capacity. Hence, all premature infants should be given vitamin D in highly concentrated form, beginning during the first ten to fourteen days.

Doctor Youmans did not mention vitamin K for lack of time, but from a pediatric standpoint the recent introduction of vitamin K has revolutionized our concept of the cause and treatment of the so-called acute hemorrhagic diseases of the newborn. Apparently practically all of these cases respond to the giving of vitamin K by mouth in comparatively small doses, and it would be well worth the time of all who do obstetrics and pediatrics or who work at all with the newborn infant to investigate the recent work that has come out on this subject, particularly that during the last four to six months.



DR. JOHN YOUNG (closing): I have been asked to say a word or two about vitamin C in wound healing. Let me preface that by saying that vitamins concern everyone who practices medicine. I do not care what his specialty is or what he does, they are fundamental things that affect the whole body and we cannot escape them. One practical application is the relation of vitamin C to wound healing. A great many patients at the time they are operated on are low in vitamin C,

and there is a good likelihood that wound healing will be poor, that rupture will occur, and in some hospitals at the present time certain surgical patients, all patients in whom the opportunity allows, are put in the condition of good vitamin C nutrition before the operation is done.

I might say that in general this applies to other vitamins as well. If one sends the surgical patients to operation in good nutrition whenever possible, the results will be greatly improved.

# W E L C O M E

Tennessee State Medical Association

NOEL HOTEL

*Nashville's Newest and Finest*

NASHVILLE, TENNESSEE

*Headquarters for*

*Tennessee State Medical Association*

*April 8, 9, 10, 1941*

## TREATMENT OF APPENDICEAL PERITONITIS\*

W. D. HAGGARD, M.D., and J. A. KIRTLEY, JR., M.D., Nashville

The "immediate versus the delayed treatment of peritonitis" has been a very popular subject for many years, especially during the conservative trend of the past five years. Mortality reports are as good in one group as in the other.<sup>1</sup> Horsley, advocating immediate operation, "no matter what the stage of the disease," reports 2.94 per cent mortality in thirty-four cases of "spreading peritonitis." On the other hand, Guerry, practicing delayed operation, reports 135 cases of "diffuse peritonitis" with a mortality of 1.4 per cent. The period of delay is not given.

The above figures represent the lower mortality rates, while other reports selected at random range upward to fifty-two per cent—sixty per cent in each group.<sup>4</sup> (Table I.) The following brief outline of treatment is classified according to our diagnosis of the pathological changes presented by the patient on admission. It is important to again emphasize that as the peritonitis increases, localizes, or subsides we may change our original plan of treatment. (Table II.)

### ACUTE APPENDICITIS WITHOUT PERFORATION

Immediate operation should be carried out with an expected mortality of less than one per cent.

### APPENDICITIS WITH LOCALIZED PERITONITIS

It is apparent that the surgeon cannot always be certain of this diagnosis since not infrequently the appendix thought to be ruptured proves not to be. We feel that immediate operation should be done in those cases in which there is evidence of peritoneal inflammation in the right lower abdomen without a well-defined mass.

#### APPENDICEAL ABSCESS

These patients are usually seen by the surgeon on the fourth or fifth day of the disease. They exhibit the signs of toxemia while a mass may be outlined in the right lower quadrant. Although quite ill, these patients are "walling off" the infection, and it is our practice to delay operation from a

day or so to two weeks. As Gardner<sup>2</sup> has shown at Duke University, eighty per cent of these inflammatory masses will subside.

These patients are transfused one or more times, the intestinal tract is kept empty and quiet, and sulfanilamide is given.

Should the temperature and pulse rate increase or the mass increase in size, drainage of the abscess is instituted at once, provided the abscess wall is adherent to the parietal peritoneum. When there is danger of contaminating the remainder of the uninvolved peritoneal cavity, cigarette drains are placed down to the abscess and the cavity evacuated later, often this occurring spontaneously. Whenever possible the abscess is drained through a retroperitoneal approach.

To restate the treatment in this group, patients presenting a definite abscess on admission are treated conservatively for at least twenty-four to forty-eight hours. If they are improving, operation is deferred; if there is no improvement, operation is carried out when the patient has had a period of rest (often following a long trip in an automobile) and his water balance and blood chemistry have been corrected.

### DIFFUSE OR GENERALIZED PERITONITIS

These terms are poorly defined, and as Ladd<sup>3</sup> has pointed out "no surgeon really knows how diffuse the process is unless he has done a very improper operation." These patients have generalized abdominal rigidity and distention without any evidence of localized inflammatory masses. We feel that cases must be studied individually and an effort made to improve the water balance and "shock" before operation. In general operation is deferred long enough to administer dextrose in saline either intravenously or subcutaneously, while the distention is combatted by a Levine tube placed in the stomach and attached to a suction siphonage setup. Operation is usually performed under spinal anesthesia through a McBurney incision and purulent exudate is removed by a suction tube instead of

\*Read by title before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.



sponges. We have tended to use fewer drains and now use a single cigarette drain in the right iliac fossa, closing the wound loosely about it.

The appendix is removed in practically all cases, and as previously emphasized by Doctor Haggard the often present fecalith is looked for and removed, since it is an important source of infection.

#### POSTOPERATIVE CARE IN PERITONITIS

1. Decompression of distended intestine should be continued, as its importance has already been stressed. It is especially useful in relieving obstruction due to fibrinous adhesions between loops of bowel and has replaced enterostomy in the immediate postoperative period. The patient is allowed fluids *ad libitum* while the Levine tube is in place.

2. Maintenance of water balance. Collier and his colleagues have shown that the average surgical patient loses about 2,000 cubic centimeters of water by vaporization per day and requires 1,500 cubic centimeters output for normal urinary function. This basic 3,500 cubic centimeters may be given as 2,000 cubic centimeters of five per cent dextrose intravenously in the morning and 1,500 cubic centimeters of saline (or dextrose) by hyperdermoclysis in the afternoon. One must be on guard against a salt edema.

3. Adequate caloric intake. It is important to maintain as nearly normal metabolic balance as possible in those patients who cannot take fluids or food by mouth. Dextrose in five per cent solution may be given either intravenously or subcutaneously. This supplies liver glycogen and stimulates diuresis. Mueller has recently advised the addition of alcohol to the intravenous dextrose or saline. If 100 cubic centimeters of alcohol is added to 2,000 cubic centimeters of five per cent glucose, the patient receives about 800 calories and the sedative effect of the alcohol is beneficial.

4. Use of sedatives and stimulants. Morphine may be safely given in peritonitis, as it probably increases intestinal tone, but promotes comfort and rest and lessens thirst. It should be given at definite intervals during the first few days, usually

ten milligrams (1/6 grain); every four to six hours is sufficient.

There is some clinical evidence favoring the use of pitressin or prostigmine, but they should be used with discrimination and discontinued if blood pressure changes occur.

5. Position of bed. Elevation of the head of the bed (Fowler's position) certainly increases the patient's vital capacity and probably aids in keeping exudate confined to the lower abdomen which withstands infection better than the upper abdomen.

6. Chemotherapy. While beneficial in some cases, sulfanilamide and allied compounds have not been of extremely great value in combatting peritonitis. Studies at the University of Pennsylvania showed a decrease in mortality in the group given sulfanilamide as contrasted with a previous untreated group. Further observations will determine their importance.

7. Blood transfusions. Small transfusions are indicated in prolonged illness or in anemic patients. They also aid in building up serum proteins and thus prevent nutritional edema.

8. Oxygen therapy. This is an important aid which has been too often reserved for the moribund patient. High concentrations of oxygen have been shown to promote absorption of gas from the distended bowel. (Fine, et al.) Oxygen may be given by a nasal tube, a flow of six liters per minute giving the patient a fifty to sixty per cent concentration. Higher concentrations are easily given by a Mayo mask and clinically are of great value.

9. Serum therapy. We have had little experience with antitoxic serums in peritonitis and their benefits are still questionable.

10. Thermotherapy. Ochsner advises the use of moist or dry heat to the abdomen, as it seems to simulate peritaxis. The use of turpentine stupes, hot compresses, or infrared heat are often indicated.

#### COMMENT

There is need for standardization in reporting results of the treatment of appendiceal peritonitis in order that satisfactory comparisons may be made. We practice

the individualization of cases of peritonitis before deciding on immediate or delayed operative treatment. Body fluids and blood chemistry should be at least partly corrected before operation, and we feel that marked distention requires decompression prior to operation. If the existing pathologic state is considered along with the clinical picture, many cases of peritonitis will be treated conservatively and will recover. We do not agree entirely with the policy advocated by some—that “these patients should not be permitted to die medically.”

TABLE I

COMPARISON IN IMMEDIATE AND DELAYED OPERATIVE RESULTS IN GENERALIZED PERITONITIS

IMMEDIATE OPERATION		
<i>Author</i>	<i>No. of Cases</i>	<i>Mortality Per Cent</i>
Potter and Coller*-----	XX	52
Wright -----	44 (1935)	45.4
Pattison -----	81	43.2
Stanton -----	113	42
Wright (3-6 hours' delay)---	60 (1938)	11.7
Cuerry* -----	94	10.4
Horsley "Spreading Peritonitis" -----	34	2.94

## DELAYED OPERATION

Hawk -----	10	60
Sperling -----	46	43.4
A. J. Ochsner-----	33 (1904)	30
Kirtley and Daniel*-----	314	16.3
Potter and Coller-----	XX	8.3
Guerry* -----	135	1.4

\*Includes also localized peritonitis and appendical abscess.

TABLE II

ANALYSIS OF 2,613 CASES OF APPENDICITIS AT HAGGARD CLINIC (1915-1938)

	<i>Cases</i>	<i>Mortality</i>	
		<i>Deaths</i>	<i>Per Cent</i>
Acute Appendicitis -----	2,007	12	.54
Localized peritonitis or abscess -----	417	24	5.7
Generalized peritonitis --	189	47	24.8
Totals -----	2,613	83	3.1

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# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### THE BASIC SCIENCE BILL

The Basic Science Bill met a late and tragic fate. As stated in the February issue of the JOURNAL, the bill passed the Senate and House by good majorities. It remained on the Governor's desk without action until the last hours of the last session of the legislature. The veto message was sent up after ten o'clock on Saturday night. At that time the House and Senate were only technically in session. The clock had been turned back. There was no opportunity to secure passage over the veto of the Governor. He saw to that.

The veto message was as follows:

"I herewith return Senate Bill No. 314, without my approval, as it does not appear to be in the public interest."

(Signed) PRENTICE COOPER,  
Governor.

It was on Saturday morning that members of the committee who reside in Nashville received information that there was

danger that the Governor might veto the bill. Until that morning the committee entertained complete confidence that the bill would be approved.

On another page of this issue of the JOURNAL under the heading "Preliminary Report of the Legislative Committee," will be found a statement by the chairman, Dr. N. S. Shofner, as to what occurred during an interview with the Governor on this matter. From the statement it will be obvious that the Governor reiterated philosophies expressed by chiropractors who opposed the passage of the bill. For example, chiropractors advanced the argument that the medical profession sought *merely* to destroy a *competing science*. They insisted also that it is unfair for one competing science to propose or sponsor legislation affecting another competing science.

The question of freedom was also raised. It was intimated, even by the Governor, that this legislation was intended to impair in some way the freedom of people in their selection of a doctor.

All who studied the provisions of the bill know better than that. It is common knowledge that the medical profession, individually and collectively, stands for freedom in the choice of a physician. The medical profession stands for efficiency and freedom.

Of course, volumes could be written of this experience but this is not the place for a long statement.

As early as May, 1940, the committee became aware that chiropractors and chiropractic schools were raising money and organizing a campaign to accomplish the defeat of the basic science bill in Tennessee. This activity, in the main, was going on outside of Tennessee.

The better chiropractic schools advertise to their prospective students that they give a course in the basic sciences, qualifying their graduates to stand a basic science examination. The poor grade schools do not give such a course.

In answer to the major arguments, presented by the opponents, the sponsors of the bill said, in effect, that science is science. There is no such thing as a competing science. Chemistry is chemistry. A chemi-

cal reaction which takes place in the laboratory of a medical school will take place in any other place under heaven.

The science of anatomy does not change by reason of the location of the laboratory in which it is taught.

Physiology is not altered by the fact that a chiropractor teaches it; nor does the subject of bacteriology change. A streptococcic infection can go merrily on its way while an argument is carried on as to whether a knowledge of the subject of bacteriology is essential to the treatment of such an infection.

It was the contention of the proponents of the bill that a knowledge of the basic sciences is necessary to qualify anyone to engage in any form of the healing art.

The bill, therefore, was proposed in the public interest and not in the interest of the medical profession. The public interest concerned is the life and health of sick people. It was to protect sick people against the danger to them which arises when bold ignorance instead of scientific knowledge is brought to play in the sickroom.

It was proposed for the purpose of raising the standard of all forms of the healing art, and not to destroy any form of the healing art.

It seems difficult for some people to see the difference between a license to practice medicine and a license issued to a grocery store, both of which are issued by some agency of the state.

The licensing of a grocery store is a mechanism for collecting a tax.

A license to practice the healing art, in reality, is a certificate from the sovereign state to the public that the holder thereof is a person fit and qualified to practice. He is supposed to display that certificate to public notice as evidence that he has stood the test of the state.

It was long ago accepted as a proper function of the state government to pass upon the qualifications of persons who are permitted to diagnose and treat disease. Such legislation was sponsored and enacted in the interest of the public, not as a benefit to doctors. The requirements have been raised from time to time, in the public interest.

The campaign which was organized outside of Tennessee by agencies who have no interest in Tennessee, except as an outlet for their inferior graduates, accomplished its purpose. The bill was not defeated in the House nor in the Senate. Defeat was accomplished by the lack of one signature—that of the Governor. Tennessee, then, will continue to be, for the time being, an inviting field to those graduates of inferior institutions not qualified with a knowledge of the basic sciences. Both they and the schools which graduate them have the Governor, alone, to thank for it. He *alone* deserves the glory thus achieved.

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#### STATISTICAL DATA—WHICH WAY SHALL THEY BE INTERPRETED?

Dr. W. F. Draper, Assistant to the Surgeon General, United States Public Health Service, in an address delivered February 6, among other things, said: "Venereal disease ranks high among the factors which cut down a man's ability to produce. From the World War until 1939, gonorrhea headed the list as a cause of lost time in the Army."

The existence of a relatively high incidence of disability from various causes is often urged as a reason for a radical change in the present system of medical practice.

It is urged that the ability to pay for services is a very large contributing factor. It is also urged that the lack of facilities is the cause of a high incidence of disability from various causes.

In the case of the Army, the soldier has free treatment available for any condition that arises. Adequate facilities for treatment are always available regardless of the disease.

Also, educational campaigns have been conducted in the Army. The men are under strict military regulations as to discipline, etc. The men have stood physical and mental examinations before admission to the Army. Notwithstanding all these factors, according to the figures, gonorrhea headed the list as a cause of lost time in the Army over a period of years.

The agitators who have tried to convince the people of the United States that if some agency of the government had complete



power over doctors and patients and large appropriations with which to work, to correct all the deficiencies that exist in human nature, should note these figures.

Here is an example of power over both doctors and patients. Medical care without cost, adequate facilities, etc., and still there is disease and disability. In theory, many of the propositions ought to work but, in fact, don't work.

This is not a case of finding fault with the medical department of the Army. It is a case of showing that that system administered under the most ideal conditions does not work perfectly as many of the proponents of radical change would have the public believe.

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#### THE MEDICAL PROFESSION AND LEGISLATORS

The Chamber of Commerce of the United States has issued a communication offering advice to people concerning their relations with members of Congress under the title "In Writing to Your Congressman." There is included in the communication a list of Do's and Don'ts. The following are excerpts from the communication:

"It is well for members of the medical profession to communicate with their representatives in the state legislature and in the Congress of the United States on matters of medical legislation. It is important, however, that these communications be in a form that will make them influential."

"But experience has shown that members of the legislature do not always know how and why their legislative acts will affect the practice of medicine unless physicians write and tell them."

"Your views are always welcome, for the men who stay in the legislature the longest are those who read and heed their constituents' letters. But there's a right way to write effectively to your legislators. May we offer these suggestions:

DO—

Spell your legislator's name correctly.

Make sure whether he is a Senator or an Assemblyman.

State concisely what you think and why—the briefer the better.

Cite specific illustrations, whenever possible, as to effects proposed legislation would have on the practice of medicine and people in your community.

Write on your office stationery.

Sign your name plainly. Type it under the signature.

Send a letter rather than a telegram when time permits.

Seize every opportunity to become personally acquainted with your legislators.

DON'T—

Threaten political reprisals.

Write in a captious or belligerent mood. Remind your legislators of broken promises.

Attempt to speak for anybody but yourself.

Insert newspaper clippings or mimeograph material.

Send a chain letter or post card.

Quote from form letters.

Write only when you want a favor. Letters of commendation are always welcome.

Try to make an errand boy out of your legislator.

Become a chronic letter writer.

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#### NATIONAL PHYSICIANS' COMMITTEE

The following statement appeared in the Journal of the American Medical Association for December 7, 1940. It is worthy of the attention of every doctor:

#### NATIONAL PHYSICIANS' COMMITTEE

Many inquiries have been received relative to a mailing which the National Physicians' Committee for the Extension of Medical Service has just sent, we are informed, to every physician in the United States. In this statement of its postelection position, policy and program, attention is called to the statements made by President Franklin D. Roosevelt and Mr. Wendell Willkie on the subject of socialized medicine previous to the election. The committee points out the importance of sustaining public opinion so that the public will come to understand the vital importance of maintaining the delicate and subtle relationship of doctor and patient and will support the independ-

ence of the medical profession. At a meeting of its Management Committee, held in Chicago on November 10, the National Physicians' Committee, says the statement, adopted the following resolutions:

"Be it recorded that it is the unanimous opinion of the Management Committee of the National Physicians' Committee that under conditions now prevailing there is a greater and more pressing need than at any previous time for such activities as those of the National Physicians' Committee.

"Be it recorded as the unanimous opinion of the Management Committee that we continue the operations of the National Physicians' Committee with increased vigor."

With this decision the National Physicians' Committee has sent to the medical profession a list of activities and objectives proposed for the coming year and a plan for sustaining the organization so that it will be able to function effectively. This statement follows:

#### NATURE OF ACTIVITIES AND OBJECTIVES

"It is essential that funds be provided for:

"1. A continuous flow of articles to more than eighty medical journals.

"2. Stimulating discussion of this all-important issue in forty-eight state medical meetings, in the meetings of two thousand county medical societies, and hundreds of sectional and special medical meetings and conferences.

"3. Preparing and providing for the preparation of articles and releases for thousands of newspapers and hundreds of magazines, and arranging for their publication.

"4. Speakers for medical and public meetings and arranging for physicians appearing before local groups and on local radio broadcasts.

"5. Radio broadcasts and the preparation of speeches and radio broadcasts to be generally available, and the providing of electrical transcriptions of short speeches and

radio broadcasts and arranging for their effective use.

"6. The maintaining of strategically important public contracts.

"7. The arranging of conferences with boards of hospitals and clinics; business, industrial and other lay groups; and for group meetings of laymen.

All to the end that:

"(a) political control of medicine can be avoided;

"(b) the independence of the profession and the pattern of medical practice be preserved; and,

"(c) the American people can be resold on the incomparable advantages of the American Way of Life."

The medical profession generally has been asked to contribute to a furtherance of these commendable objectives. The work of the National Physicians' Committee, which is wholly in charge of its own Board of Trustees, thus contemplates an expanded program of public enlightenment. Since new legislation in the field of medical service is constantly before Congress, an agency of this type will find a large field for its service.

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#### PYELONEPHRITIS IN PREGNANCY

In the February issue of the *Journal of Urology*, Dr. George C. Prather published an article on the above subject.

Those who write abstracts for the TENNESSEE JOURNAL are always on their toes to find the best in current literature and to give our members the benefit of their reading. Hundreds of articles are read monthly and an abstract of the best sent for publication.

Both "Urology" and "Obstetrics and Gynecology" sent in abstracts of Dr. Prather's article. Regardless of the similarity of the abstracts we are printing each under the heading for which it was intended.



## PRELIMINARY REPORT OF THE LEGISLATIVE COMMITTEE

(Report of a meeting of Drs. L. W. Edwards, H. H. Shoulders, and N. S. Shofner with Governor Prentice Cooper at the executive office on Saturday afternoon, February 15, 1941.)

The Basic Science Bill had been passed by the Senate on Wednesday, February 5, by a vote of nineteen to three, and on Thursday, February 6, by the House by a good majority. It had been assumed on good grounds that there would be no opposition by the governor and that the bill would be signed without any delay. The bill is known to have been engrossed and to have reached the governor's desk on February 10. So sure were the Nashville members of the legislative committee that the measure would become law that Dr. Shoulders published a jubilant editorial in the February issue of the JOURNAL announcing the successful conclusion of the association's efforts. This editorial was read beforehand and heartily endorsed by Drs. Edwards and Shofner.

On Friday night, February 14, it was learned that the bill had not been signed by the governor and that he might veto it. Saturday morning Dr. Edwards called the governor's office to ask for an appointment and was told that he and the committee members could come to the capitol at 2:00 P.M., and probably could see the governor.

At the appointed time Drs. Edwards, Shoulders, and Shofner entered the antechamber of the executive office and awaited the return of the governor from lunch. In a few moments the governor arrived and in passing through the antechamber shook hands and spoke very civilly, if reservedly, to Drs. Shoulders and Shofner. Dr. Edwards at the moment was in conversation with Mr. Bain Stewart, who guards the portals to the governor's private office.

Very soon Mr. Stewart left our group and in a few minutes returned to say that he had arranged a five-minute interview with the governor. Mr. Stewart emphasized the pressing duties of the governor and repeated that five minutes was the absolute maximum of time we could have and laughingly said that at the end of that time we would have to come out even if he had to drag us out.

We agreed and entered the Presence.

Without preamble the governor asked us to state our business. Dr. Shofner had been selected to act as spokesman and immediately began speaking.

The following report is not a verbatim report of the ensuing conversation but is written three days later while memory is fresh and is a true report and in substance an accurate report.

Dr. Shofner: "We have come as representatives of the Tennessee State Medical Association in the interest of the Basic Science Bill which has been passed by both houses of the legislature. We hope that you will sign the bill and would like to know whether you approve."

Governor Cooper: "I do not care to be asked what I intend to do about the bill. If you wish to present your arguments I shall listen. Then I may have a few remarks to make myself but what I intend to do about the bill I do not intend to say. What is the purpose of this bill?"

Dr. Shofner: "The purpose of the bill is to elevate the standards of all branches of the healing art by requiring all applicants in Tennessee to pass an examination in the five sciences which are basic to an understanding of disease, no matter what form of therapy—"

Governor Cooper (interrupting and addressing Dr. Shofner): "You are my cousin. Let me hear from Dr. Shoulders. He is an old war horse whom I have seen about the capitol for years."

Dr. Shoulders: "Well, Governor, the purpose of this bill is outlined—"

Governor Cooper (interrupting): "Let me tell you gentlemen that all such bills as you are advocating have as their purpose the elimination of competition and I am opposed to the principle of such bills. I know what you say are the purposes of the bill but somehow the bill will serve to eliminate competition to you doctors. This is a time when nearly everybody is trying to make living a little easier and to have to struggle a little less hard. The contractors have tried to eliminate competition by preventing contractors from other states from coming into Tennessee. The railroads want

to eliminate competition. All such legislation is vicious legislation.

"Now you fellows say you want to raise standards but what you would do is to make it impossible for a man to be rubbed unless he is rubbed by a doctor. Now, I have never been to an osteopath or a chiropractor—none of my family have. We have always had doctors and if we had always been fools enough to follow their advice it would have been disastrous.

"Once when I was in the legislature I heard a doctor get up and say that the doctors understood all medical problems pretty well and had diseases pretty well under control. I thought 'what a vulnerable statement for any doctor to make. Why, even the existence of bacteria was not discovered until 1876.' Now, I don't know how much value there is in rubbing but if anybody feels like being rubbed I feel that he has a right to be rubbed. I have known a few chiropractors and osteopaths in Shelbyville and I never knew of their doing anybody any harm. They were good citizens, paid their taxes and supported the church.

"Now, I personally do not believe in fortune tellers but I would not say that nobody else has a right to consult a fortune teller.

"Now, you may say that the public should be protected from unqualified practitioners but I say that it is like trying to protect a man from being cheated in a horse trade. You may say it is wrong for a man to be cheated in a horse trade but you cannot protect him by legislation. I have always thought that if a doctor was very good he would get along all right regardless of competition and he does not need laws to suppress competition."

Dr. Edwards: "Governor Cooper, this bill is not intended to eliminate competition, on the contrary—"

Governor Cooper (interrupting): "Now, Doctor, don't try to tell me that. I know how organizations of professional men are. One man will say that some movement is a good thing. Somebody else will say it certainly is. Let us get behind it and first thing you know there is a great movement on foot. Now the lawyers have been excited about a bill for their profession. Being a lawyer, I can see more clearly the fallacy of

their position but I am convinced that all bills of this sort are not in the public interest.

"Now, I don't want you fellows to misunderstand me but I think all such legislation is bad legislation, I am for the doctors but I think this is a bad bill.

"Tell me what other states have passed such legislation. I am often influenced by experience."

(Here a list of sixteen states was handed the governor, who hurriedly looked it over and remarked that none of the states named were progressive.)

"What have such states as New York, Massachusetts, and Virginia done?"

Dr. Shoulders: "I can tell you, Governor."

Governor Cooper (interrupting): "Write it out for me. Let me have your arguments and figures in writing.

"Are you gentlemen officers of the Tennessee State Medical Association?"

Drs. Edwards, Shoulders, and Shofner: "Yes."

Governor Cooper: "Well, you gentlemen did not show me the courtesy of consulting me before introducing this legislation and I am under no obligation to help you."

Dr. Shoulders: "Governor, I would like to remind you that two years ago we did consult you about this legislation and just before this session we called at your office to see you and were advised by Mr. Stewart to see Mr. Jimmy Hardin who was helping you with studying proposed legislation. We also talked with Dr. Williams, Commissioner of Public Health, a member of your administration, and felt that we had shown deference to your administration."

Governor Cooper: "Jimmy Hardin! What has Jimmy Hardin to do with my decisions? Jimmy Hardin has nothing to do with forming my opinions.

(Rising) "Well, get your information and submit it to me in writing."

Dr. Shofner: "Just what information is it that you wish submitted?"

Governor Cooper: "I leave that up to you."

Drs. Edwards, Shoulders, and Shofner exeunt without having had an opportunity to present any arguments although the conference had lasted about twenty minutes instead of the stipulated five minutes.



## PROGRAM OF THE TENNESSEE STATE MEDICAL ASSOCIATION TO BE HELD AT NASHVILLE, APRIL 8, 9, 10, 1941

The following scientific program is complete except for a few minor details. The numbers are not arranged in the order in which they will appear in the final program.

In the opinion of the Program Committee it is the best program we have ever arranged.

### DISTINGUISHED GUEST SPEAKERS

#### An Address.

DR. FRANK H. LAHEY, President-Elect, American Medical Association, Boston.

#### Surgery of Peptic Ulcer.

DR. HOWARD K. GRAY, Rochester, Minnesota.

#### The Medical Profession in National Defense.

GENERAL ALBERT G. LOVE, Surgeon General's Office, Washington, D. C.

#### Diagnosis and Treatment of Cancer of the Throat (Lantern Slides).

DR. ARTHUR C. CHRISTIE, Washington, D. C.

#### An Address.

DR. OLIN WEST, American Medical Association, Chicago, Illinois.

#### The Diagnosis of Rheumatic Infections in Children.

DR. STANLEY GIBSON, Chicago. (Guest Speaker for Tennessee State Pediatric Society.)

#### Medical Relationships in Industry.

DR. CARL M. PETERSON, Secretary, Council on Industrial Health, American Medical Association, Chicago.

**Tuesday, April 8, 1941  
8:00 P.M.**

#### Presidential Address.

DR. L. W. EDWARDS, Nashville.

#### Address.

DR. FRANK H. LAHEY, President-Elect, American Medical Association, Boston.

#### Address.

DR. OLIN WEST, American Medical Association, Chicago.

#### 1. The Pneumonia Control Program (A Symposium by Members of the Pneumonia Control Com- mittee).

##### Introduction and Classification.

DR. F. TOM MITCHELL, Memphis.

##### The Specific Treatment of Pneumonia.

DR. O. N. BRYAN, Nashville.

##### The Non-Specific Treatment of Pneumonia.

DR. E. R. ZEMP, Knoxville.

##### To Discuss:

DR. E. L. TURNER, Nashville.

DR. C. H. SANFORD, Memphis.

DR. TIM. J. MANSON, Chattanooga.

#### 2. Medical Treatment of Peptic Ulcer.

DR. W. C. COLBERT, Memphis.

##### To Discuss:

DR. J. O. MANIER, Nashville.

DR. C. R. THOMAS, Chattanooga.

#### 3. Gastrointestinal Hemorrhage.

DR. BATTLE MALONE, II, Memphis.

##### To Discuss:

DR. R. G. WATERHOUSE, Knoxville.

DR. J. M. HIGGINBOTHAM, Chattanooga.

#### 4. Treatment of Bacillary Dysentery with Sul- fathiazole.

DR. R. E. CHING, DR. OTIS WARR, Jr., and  
DR. J. BARNEY WITHERINGTON, Memphis.

##### To Discuss:

DR. JACK WITHERSPOON, Nashville.

DR. A. E. KELLER, Nashville.

#### 5. Intervertebral Disc Pain and Its Relief.

DR. F. M. MURPHEY, Memphis.

##### To Discuss:

DR. R. W. BILLINGTON, Nashville.

DR. ROBT. BRASHEAR, Knoxville.

#### 6. Lesions of the Cervix.

DR. W. L. WILLIAMSON, Department of Gynecol-  
ogy, University of Tennessee, Memphis.

##### To Discuss:

DR. W. C. DIXON, Nashville.

DR. HERBERT ACUFF, Knoxville.

#### 7. Ante-Partum Uterine Bleeding.

DR. C. G. BRINGLE, Memphis.

##### To Discuss:

DR. HARRY H. JENKINS, Knoxville.

DR. H. P. HEWITT, Chattanooga.

#### 8. Treatment of Hemorrhoids.

DR. M. W. HOLEHAN, Memphis.

##### To Discuss:

DR. D. W. SMITH, Nashville.

DR. J. M. STOCKMAN, Knoxville.

#### 9. The Treatment of Shock with Particular Reference to the Use of Blood Plasma.

DR. ALFRED BLALOCK, Nashville.

##### To Discuss:

DR. L. W. DIGGS, Memphis.

DR. E. L. RIPPY, Nashville.

#### 10. Fractures at the Wrist Joint.

DR. R. R. BROWN, Nashville.

##### To Discuss:

DR. HERSCHEL PENN, Knoxville.

DR. W. J. SHERIDAN, Chattanooga.

#### 11. The Treatment of Compound Fractures.

DR. EUGENE M. REGEN, Nashville.

##### To Discuss:

DR. ROBERT F. PATTERSON, Knoxville.

DR. H. B. BOYD, Memphis.

#### 12. Acne Vulgaris.

DR. C. M. HAMILTON, Nashville.

##### To Discuss:

DR. ROBT. L. PATTERSON, Chattanooga.

DR. E. R. HALL, Memphis.

**13. The Tuberculosis Control in Tennessee.**

DRS. W. W. HUBBARD and R. S. GASS,  
Tennessee State Department of Health.

To Discuss:

DR. J. B. NAIVE, Knoxville.  
DR. D. M. CARR, Memphis.

**14. Endocrine Therapy in Gynecology.**

DR. JOHN C. BURCH, Nashville.

To Discuss:

DR. B. M. OVERHOLT, Knoxville.  
DR. M. W. SEARIGHT, Memphis.

**15. The Medical Aspects of Child Behavior.**

DR. HORTON CASPARIS, Nashville.

To Discuss:

DR. J. GILBERT EBLE, Knoxville.  
DR. D. C. MCCOOL, Memphis.

**16. Present-Day Method of Treating Urinary Tract Infection.**

DR. BURNETT WRIGHT, Nashville.

To Discuss:

DR. B. C. ARNOLD, Jackson.  
DR. J. B. KILLEBREW, Chattanooga.

**17. Management of Early Syphilis.**

DR. A. H. LANCASTER, Knoxville.

To Discuss:

DR. HORACE C. GAYDEN, Nashville.  
DR. C. H. MARSHALL, Memphis.

**18.**

DR. ROBERT P. McCOMBS, Instructor in Internal Medicine, Postgraduate Committee.

**19. Diabetes and Its Low Index of Suspicion.**

DR. HENRY CLAY LONG, Knoxville.

To Discuss:

DR. R. C. DERIVAUX, Nashville.  
DR. F. E. MARSH, Chattanooga.

**20. Preserving Physiological Functions in Nasal Operations.**

DR. R. G. REAVES, Knoxville.

To Discuss:

DR. J. J. SHEA, Memphis.  
DR. STEWART LAWWILL, Chattanooga.

**21. Tumors of the Breast.**

DR. C. L. CHUMLEY, Knoxville.

To Discuss:

DR. BARNEY BROOKS, Nashville.  
DR. SHIELDS ABERNATHY, Memphis.

**22. Carcinoma of the Rectum.**

DR. GENE H. KISTLER, Chattanooga.

To Discuss:

DR. CHAS. C. TRABUE, Nashville.  
DR. JOHN L. JELKS, Memphis.

**23. A Study in Thyroid Heart Disease.**

DR. PHILIP H. LIVINGSTON, Chattanooga.

To Discuss:

DR. TINSLEY R. HARRISON, Nashville.  
DR. H. B. GOTTEN, Memphis.

**24. The Diagnosis and Management of Goiters.**

DR. CECIL E. NEWELL, Chattanooga.

To Discuss:

DR. J. A. CRISLER, Jr., Memphis.  
DR. N. S. SHOFNER, Nashville.

**25. The Female Urethra.**

DR. G. MADISON ROBERTS and DR. GILBERT ROBERTS, Chattanooga.

To Discuss:

DR. HENRY L. DOUGLASS, Nashville.  
DR. JOHN L. SHAW, Memphis.

## THE TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President, DR. W. W. WILKERSON, JR., Nashville

Vice-President, DR. J. V. HODGE, Kingsport

Secretary and Treasurer, DR. WM. D. STINSON, Memphis

### HOTEL NOEL, NASHVILLE

**Tuesday, April 8, 1941  
9:00 A.M.**

**1. Allergy and Its Relation to Sinusitis.**

DR. C. H. GLOVER, Memphis.

To Discuss:

DR. W. A. GARROTT, Cleveland.  
DR. J. W. CALDWELL, Nashville.

**2. Contact Lens.**

DR. J. WESLEY McKINNEY, Memphis.

To Discuss:

DR. ROBT. WARNER, Nashville.  
DR. J. B. BLUE, Memphis.

**3. Occupational Deafness.**

DR. DOUGLAS CHAMBERLAIN, Chattanooga.

To Discuss:

DR. LOUIS LEVY, Memphis.  
DR. E. L. GRUBB, Knoxville.

**10:30 A.M.**

**4. Guest Speaker.**

DR. DAN B. KIRBY, Professor of Ophthalmology, Medical School of University of New York; Visiting Ophthalmologist, Bellevue Hospital.

Subject: Procedures in Cataract Extraction.

**5. Intractable Epistaxis, A Case Report.**

DR. EUGENE ORR, Nashville.

To Discuss:

DR. STEWART LAWWILL, Chattanooga.  
DR. W. LIKELY SIMPSON, Memphis.

**6. Presentation of Instruments and Specimen.**

**1:00 P.M.**

**PRESIDENT'S LUNCHEON**

Guests of the President

DR. W. W. WILKERSON, JR., Nashville

**2:00 P.M.**

**7. Color Pictures of External Eye Diseases.**

DR. JOHN L. MONTGOMERY, Knoxville.



## To Discuss:

DR. CARROLL SMITH, Nashville.  
DR. PHIL M. LEWIS, Memphis.

8. **Mycoses Infection of the Throat.**

DR. J. J. SHEA, Memphis.

## To Discuss:

DR. W. G. KENNON, Nashville.  
DR. ROBT. REAVES, Knoxville.

9. **Sulfathiazole Treatment of Acute Otitis Media.**

DR. FRANK L. ALLOWAY, Kingsport.

## To Discuss:

DR. WILLARD STEELE, Chattanooga.  
DR. G. M. MANESS, Nashville.

10. **Executive Session with Election of Officers.**

6:30 P.M.

**DINNER**

Guests of Nashville Society of Ophthalmology  
and Otolaryngology

11. **The Art of Refraction.**

DR. E. C. ELLETT, Memphis.

12. **Installation of Officers.**

## TENNESSEE STATE PEDIATRIC SOCIETY

President, DR. KINSEY M. BUCK, Memphis  
Vice-President, DR. JOE STRAYHORN, Nashville  
Secretary, DR. GILBERT EBLEN, Knoxville

**HOTEL NOEL**

**Tuesday, April 8, 1941**

9:00 A.M.

**Presidential Address—"Pediatric Emergencies."**

DR. KINSEY M. BUCK, Memphis.

9:20-10:20 A.M.

**Round - Table Discussion—"The Neurological Examination of Children."**

DR. WILLIAM DE GUTIERREZ-MAHONEY,  
Nashville.

**Principles of Neurosurgery in Children.**

DR. COBB PILCHER, Nashville.

10:20-10:30 A.M.—Intermission

10:30-11:30 A.M.

**Round-Table Discussion—"Practical Handling of Child Behavior Problems."**

DR. HORTON CASPARIS, Nashville.

11:30-11:50 A.M.

**Differential Diagnosis of Heart Conditions in Children.**

DR. STANLEY GIBSON, Chicago, Illinois.

12:00-12:15 P.M.

**Business Meeting.**

12:30 P.M.

**Luncheon.****AFTERNOON SESSION****The Diagnosis of Rheumatic Fever in Children.**

DR. STANLEY GIBSON, Chicago, Illinois.

**PROGRAM****FOURTEENTH ANNUAL MEETING OF****WOMAN'S AUXILIARY****TO THE****TENNESSEE STATE MEDICAL ASSOCIATION****NASHVILLE, TENNESSEE**

April 8, 9, 10, 1941

**HEADQUARTERS**

ANDREW JACKSON HOTEL, NASHVILLE,  
TENNESSEE

WOMAN'S AUXILIARY TO THE NASHVILLE  
ACADEMY OF MEDICINE AND DAVIDSON  
COUNTY MEDICAL ASSOCIATION

**HOSTESS**

MRS. FOWLER HOLLABAUGH, President

"Ye blessed Creatures, I have heard the call  
Ye to each other make, I see  
The heavens laugh with you in your jubilee."

**GENERAL COMMITTEE**

MRS. CLEO MILLER, Chairman

MRS. LYNCH BENNETT	MRS. T. D. MCKINNEY
MRS. H. B. BRACKIN	MRS. THEO MORFORD
MRS. B. F. BYRD	MRS. OSCAR NELSON
MRS. GEORGE CARPENTER	MRS. J. C. OVERALL
MRS. HORACE GAYDEN	MRS. T. G. POLLARD
MRS. HOLLIS JOHNSON	MRS. ELKIN RIPPY
MRS. W. W. WILKERSON, Jr.	

**Tuesday, April 8, 1941**

9:30 A.M.

Registration, Mrs. T. D. McKinney.

12 M.

Pre-Convention Board Meeting—Andrew Jackson Hotel.

8:00 P.M.

Auxiliary Reception and Musical at the Home of Dr.  
and Mrs. N. S. Shofner, Chickering Lane. (Cars will  
leave the hotel at 7:15 P.M.)

**Wednesday, April 9, 1941**

9:30 A.M.

Fourteenth Annual Convention of the Woman's Aux-  
iliary in the Ball Room at the Andrew Jackson Hotel,  
Mrs. W. T. Braun, presiding.

Invocation, Dr. Walter Caldwell, Pastor, Woodland  
Street Presbyterian Church.

Address of Welcome, Mrs. B. F. Byrd.

Response, Mrs. W. H. Gragg.

Report of General Chairman, Mrs. Cleo Miller.

Reading of Minutes, Thirteenth Annual Convention,  
Mrs. Theo Morford.

Treasurer's Report, Mrs. Jewell Dorris.

Address—"An Observation or Two," Mrs. V. E. Hol-  
combe, National President.

**REPORT OF STANDING COMMITTEES**

Resolutions, Mrs. H. E. Christenberry.  
 Credentials, Mrs. T. D. McKinney.  
 Courtesy, Mrs. W. O. Baird.  
 Report of Officers.  
 Report of Chairmen.  
 Report of County Presidents.  
 Old Business.  
 New Business.  
 Announcements.  
 Report of Nomination Committee.  
 Election of Officers.  
 President's Message, Mrs. W. T. Braun.  
 Introduction of Incoming President, Mrs. W. W. Potter,  
 by the National President, Mrs. V. E. Holcombe.  
 Minutes.  
 Adjournment

**1:00 P.M.**

Luncheon at The Hermitage, Home of Andrew Jackson, honoring Mrs. W. T. Braun, President, and given by the Woman's Auxiliary to Nashville Academy of Medicine and Davidson County Medical Society. Following the luncheon the guests are invited to visit the mansion and stroll through the lovely old garden. (Cars will leave hotel promptly at 12:30 P.M.)

**7:00 P.M.**

Annual State Dinner in the Ball Room at the Andrew Jackson Hotel.  
 Presentation of Trophies.

**Thursday, April 10, 1941****9:00 A.M.**

Post-Convention Board Meeting—Andrew Jackson Hotel—Mrs. W. W. Potter.  
 You are cordially invited to visit the exhibits at the Noel and Andrew Jackson Hotels.  
 The Hostess Committee extends through this medium a cordial invitation to all doctors' wives throughout the state.

"Welcome ever smiles  
 And farewell goes out sighing."

**DEATHS**

Dr. Hazel Padgett, Nashville; University of Pennsylvania, School of Medicine, Philadelphia, 1892; aged 74; died February 11, 1941.

Dr. Thomas L. Phillips, Oneida; Lincoln Memorial University, Medical Department, Knoxville, 1908; aged 62; died suddenly on February 10, 1941.

**RESOLUTIONS****DR. L. L. TILLEY**

In the past thirty-one years there have been thirty-one physicians removed from our ranks by death. The last one to pass

from us was Dr. L. L. Tilley, who answered the call on December 18, 1940, after a short illness. Dr. Tilley will be greatly missed by the Wilson County Medical Association, of which he was an active member. When he expressed himself, he always spoke with force and full knowledge of the question under discussion.

Dr. Tilley will be missed by the people for whom he has practiced for years, people who knew him best and loved and appreciated him for his true worth. He will be missed by the church of Christ at Tuckers Crossroads where he met for worship regularly so long and by the Sunday school class of which he was the teacher for years.

No one can know how much he will be missed by his devoted family, for to his wife and children he was all a husband and father could be.

Therefore Be It Resolved, The Wilson County Medical Association is grieved and deplores the passing of this good man and association member.

Be It Further Resolved, That this group of his associates in organized medicine extend to his wife and children heartfelt sympathy and condolence; and

Be It Further Resolved, That a copy of this resolution be sent to his family, a copy be sent to the editor of the TENNESSEE STATE MEDICAL JOURNAL, a copy be furnished the local press and a copy be recorded in the minutes of the association.

DR. B. S. RHEA.

DR. J. J. MCFARLAND, SR.

**DR. WILL FOSTER FYKE**

On November 27, 1940, the Robertson County Medical Society lost one of its most loved members in the death of Dr. Will Foster Fyke. Dr. Fyke was born in 1890, a graduate of Vanderbilt Medical School. He did work at Allegheny Hospital, Pittsburgh, Pennsylvania, and for a while was associated with Dr. Herschel Ezell of Nashville, later coming home to practice with his father, the late Dr. B. F. Fyke, a much loved physician.

Dr. Fyke's life was beautiful in its simplicity and devotion to duty. He was truly loved and esteemed by those who knew



him. The Great Physician has called our brother practitioner. It is with a feeling of deep sorrow and regret we submit to the inevitable in his death.

Therefore Be It Resolved, That we have lost a true comrade; the medical profession a capable and faithful member; the community a valuable citizen.

Be It Further Resolved, That we extend our sympathy to his mother and other members of his family.

Be It Further Resolved, That a copy of the resolution be spread on the minutes, a copy sent to his family, and a copy sent to the JOURNAL of the State Medical Association.

Respectfully submitted,

JNO. S. FREEMAN.

R. H. ELDER.

W. B. DYE.

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#### DR. J. M. OLIVER

Whereas, on the eleventh day of January, 1941, one of our number, Dr. J. M. Oliver, answered the final summons, and

Whereas, for twenty-five years he has unselfishly given of himself to the needs of his community and the surrounding territory in the pursuit of his profession, and

Whereas, this society recognizes his great achievements in the field of medicine, his understanding of the human problems of his friends and patients, and his humanitarian attributes,

Therefore Be It Resolved, That we, the members of the Sumner County Medical Society, express our feeling of deep bereavement and sorrow, at the untimely passing of this highly esteemed and noble character.

Be It Further Resolved, That, in the expression of grief at our loss, a copy of this resolution be sent to his wife, a copy to the STATE MEDICAL JOURNAL, and a copy be included in the minutes of this society.

Respectfully submitted,

W. M. DEDMAN, M.D.,

C. D. ROBBINS, M.D.,

B. H. WARREN, M.D.,

*Committee.*

#### DR. W. L. GOSSETT

On January 17, 1941, the Robertson County Medical Society lost one of its most beloved and distinguished members in the death of Dr. W. L. Gossett of Adairville, Logan County, Kentucky.

Dr. Gossett was sixty years old and had served the people of Logan County, Kentucky, and Robertson County, Tennessee, as well as adjoining counties for the past thirty years, and in his passing, the Robertson County Medical Society has lost one of its most useful and public spirited citizens. He had been one of us, taking part in all of the varied work of our organization and had set a standard of sane and dependable ability that had few equals. He was faithful and loyal to every duty intrusted to him, he possessed a high regard for the ethics of his profession and devoted much time and energy in promoting things that were constructive to organized medicine.

We bow submissively to the divine hand of him that doeth all things well and shall abide firmly in the belief that he has been called from a life of sacrificial service to one of eternal peace and rest.

'Tis the human touch in this world that counts,

The touch of your hand and mine,  
Which means far more to the fainting heart  
Than shelter and bread and wine.

For shelter is gone when the night is o'er,  
And bread lasts only a day,  
But the touch of the hand and the sound of  
the voice

Sing on in the soul alway.

Therefore, Be It Resolved, That we have lost a true comrade and counselor.

Be It Resolved, That we extend to his bereaved wife our sincere sympathy.

Be It Further Resolved, That a copy of these resolutions be spread on the minutes, a copy sent to the wife of the deceased, and a copy sent to the State Medical Association and county paper.

JNO. S. FREEMAN,

W. B. DYE,

A. R. KEMPF,

*Committee.*

## NEWS NOTES AND COMMENTS

Dr. Ogle Jones announces the opening of his new clinic, 2714 Gallatin Road, Nashville.

In April a series of six lectures on Infantile Paralysis by outstanding medical authorities will be presented at Vanderbilt University, Nashville. These lectures are sponsored by the National Foundation for Infantile Paralysis.

Dr. Ernest W. Goodpasture, head of the Department of Pathology at Vanderbilt, is supervising the arrangements and said that eminent authorities from all parts of the country would be brought to the University to give the lectures which have been designed to cover thoroughly the entire field of the disease.

The lectures will be held in the amphitheatre of the Vanderbilt Medical School at eight o'clock each evening, and are open to all interested persons.

The dates on which the lectures are to be given are April 7, 8, 9, 14, 15, 16.

## WOMAN'S AUXILIARY

President.....Mrs. W. T. Braun  
Memphis  
President-elect.....Mrs. W. W. Potter  
Concord  
Press and Publicity.....Mrs. H. B. Brackin  
Nashville

The members of the Davidson County Auxiliary have been enthusiastically at work completing their program and preparations for the fourteenth annual state convention, to be held in Nashville, April 8, 9, 10, 1941. The Andrew Jackson Hotel will be the headquarters, so make your reservations *now*, and stay the entire time.

We are so happy to have with us at this time our national president, Mrs. V. E. Holcomb, 1635 Quarrier Street, Charleston, West Virginia, who will introduce our incoming president, Mrs. W. W. Potter, and speak to us on "An Observation or Two."

Don't miss hearing her, as she will have a timely message for us all.

Other plans include a reception and musical in the home of Dr. and Mrs. N. S. Shofner, Chickering Road, at 8 P.M.

Wednesday morning will be given to the annual business followed by a luncheon at the Hermitage, home of Andrew Jackson, honoring Mrs. W. T. Braun, president. Following the luncheon the guests are invited to visit the mansion and stroll through the lovely old garden.

At seven o'clock, Wednesday evening, there will be the Annual State Dinner in the Ballroom at the Andrew Jackson Hotel, at which time the membership trophy will be awarded.

The post-board meeting will be at nine o'clock Thursday morning with Mrs. W. W. Potter, presiding.

There will be an exhibit of interesting relics of early practice of medicine, also a Hygeia exhibit at the headquarters for the Tennessee State Medical Association, Noel Hotel.

We would like for each of you to spread the convention news and come expecting to make this convention the best that we have ever had.

Looking forward to seeing our old friends here, and many new ones.

MRS. CLEO MILLER,  
*Convention Chairman.*

The Lincoln County Medical Auxiliary met at the home of Mrs. K. P. Brown February 5. The auxiliary is delighted to have Mrs. R. T. Odom, first president of our auxiliary, back on its list of members.

It was decided at the February meeting that the auxiliary would again promote the Cancer Control Program in Lincoln County. It was also decided to make a survey of women's health interest in the county.

## MEDICAL SOCIETIES

*Blount County:*

February 20 — "Spinal Anesthesia," by Dr. J. M. McCulloch. Discussion opened by Dr. Lowell Vinsant.



February 27—"The Laity and the Doctor," by Mr. Clyde B. Emert, editor, the *Maryville Times*.

March 6—"Endocrine Glands," by Dr. W. B. Lovingood. Discussion opened by Dr. K. A. Bryant.

March 13—"Neuroses," by Dr. C. F. Crowder. Discussion opened by Dr. E. W. Griffin.

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*Davidson County:*

February 11—"Fracture and Fracture Dislocations of the Spine," by Dr. E. M. Regen. Discussion opened by Dr. R. W. Billington.

February 18—"Complete Avulsion of the Scalp" (colored movies), by Dr. Cleo Miller. Discussion opened by Dr. Beverly Douglas.

Case Report: "Sulfathiazole Causing Acute Urinary Suppression," by Drs. Hubbard, Cayce, and Pennington.

February 25—"Bandl's Contraction Ring," by Dr. M. S. Lewis. Discussion by Drs. Sam Cowan and Paul L. Warner.

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*Hamilton County:*

February 20—"State Tuberculosis Control Division of the State Health Department," by Dr. W. W. Hubbard (guest).

February 27—"The Management of Thyroid Crisis," by Dr. C. Thomas Reed.

"Complications Following Wangenstein's Continuous Suction and Indwelling Feeding Tubes," by Dr. Stewart Lawwill.

March 6—"Heart Sounds and Murmurs, with Stetho-Electrocardiographic Tracing," Dr. Robert A. Wise.

"The Problem of Tuberculosis in Chattanooga and Hamilton County," by Dr. Carl A. Hartung.

March 13—"Indications and Advantages of Modern Perineal Prostatectomy—Moving Pictures of Personal Cases," by Dr. C. H. Barnwell.

"Some Observations and Treatment of Neuritis," by Dr. W. R. Buttram.

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*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

A meeting of the society was held on February 25, at the Hassell Hotel, Waynesboro.

The following papers were read:

"Why We Should Keep Our Medical Society Going," by Dr. L. C. Harris, Lawrenceburg. Discussion opened by Dr. Dexter L. Wood, Waynesboro.

"Herpes Zoster," by Dr. C. C. Stockard, Lawrenceburg. Discussion opened by Dr. W. E. Boyce, Flatwoods.

Case reports, with round table discussions.

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*Knox County:*

February 11—"Symposium: Uses of Sulfanilamide and Compounds."

"Pulmonary Diseases," Dr. Phil Thomas.

"Meningeal Infections," Dr. L. J. Willien.

"Gentourinary Diseases," Dr. G. A. Williamson.

"Ear-Nose-Throat," Dr. Ed Grubb.

To open discussion: Dr. W. T. DeSautelle.

February 18—"Physiological Aspects of Menstruation," by Dr. Harry Jenkins. Discussion opened by Dr. Richard McIlwaine.

February 25—"Cancer of the Rectum and Sigmoid," by Dr. L. W. Edwards, Nashville.

March 4—"Dental Foci of Infection," by Dr. J. G. Sharp.

March 11—"Hematuria," by Dr. Park Nicely. Discussion opened by Dr. Tom R. Barry.

Papers scheduled to be read:

March 18—"Bone Graft in Treatment of Ununited Fractures and Bone Defects," by Dr. H. B. Boyd, Memphis.

March 25—"Rectal Bleeding," by Dr. J. M. Stockman. Discussion to be opened by Dr. Charles Clayton.

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*Madison County:*

The Madison County Medical Society met in regular session on March 4, 1941, at the New Southern Hotel in Jackson, at 6:30 o'clock.

Two papers were presented before the meeting, each being followed by general discussion by the physicians present.

"Psychiatry and the General Practitioner," by Dr. W. D. Martin, Superintendent, Western State Hospital, Bolivar, Tennessee.

"Immunity in Syphilis," by Dr. L. D. Farragut, Medical Director, Madison County Health Department.

There were twenty-seven doctors present.

S. M. HERRON, M.D., *Secretary*.

#### *Robertson County:*

The Robertson County Medical Society met in regular session at the Robertson County Hospital, February 18, 1941. After dinner the meeting was called to order by President Banks. Minutes of the last meeting were read and resolutions on the deaths of Dr. Will F. Fyke and Walter Gossett were passed.

The meeting was turned over to Dr. W. B. Dye who was to sponsor the program. He introduced his guests, Dr. H. H. Shoulders and Dr. Burnett Wright. Dr. Shoulders spoke on "Acute Abdominal Crisis." Dr. Wright spoke on "Infection of the Urinary Tract."

Dr. Freeman was made delegate and Dr. Rude alternate to the State Medical Association that meets in Nashville the early part of April.

DR. JNO. S. FREEMAN, *Secretary*.

#### *Sullivan-Johnson Counties:*

The regular March meeting of the Sullivan-Johnson County Medical Society was held in Bristol on the evening of March 5, 1941.

The program consisted of a technicolor talking motion picture shown by the Upjohn Company on "The Experimental and Clinical Uses of Gonadogen." Following this there was a general discussion of gonadotropic hormones. There were thirty-four present including four visitors.

The April meeting will be held in Kingsport on April 2, 1941.

D. D. VANCE, *Secretary*.

## OTHER MEDICAL SOCIETIES

ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY FEBRUARY 7, 1941

1. Case report: "Abdominal Pregnancy with Delivery of a Normal Term Baby," by Dr. Claiborne Williams.

A twenty-five-year-old white woman was admitted to the hospital, pregnant for the first time, ten days past her expected date of confinement, complaining of severe abdominal pain. There was a history of prolonged febrile illness associated with abdominal distress during the fourth and fifth months of pregnancy. A diagnosis of abruptio placentae was made and a laparotomy was done. A normally developed eight-and-one-fourth-pound living female baby was delivered from the abdominal cavity. The placenta was left in place and the abdomen closed without drainage. Mother and baby are living and well eighteen months after operation.

The literature on abdominal pregnancy is reviewed with emphasis on maternal and fetal mortality and diagnosis and management of cases.

This case was discussed by Drs. G. S. McClellan and W. E. Garrey.

2. "Unusual Manifestations of Referred Pain," by Dr. Chester M. Jones.

A properly taken history with a detailed description of the location of abdominal pain will usually give the clue necessary for localizing the site of gastrointestinal disease. The importance of periumbilical pain in relation to small bowel disease is stressed and illustrative cases presented. With routine methods of examination roentgenological studies frequently fail to reveal such lesions, and the internist must suspect the site of the lesion and request a special X-ray study in order to demonstrate the level of the disease. The diagnostic importance of back pain and of a shift in the localization of pain referred from the gastrointestinal tract is discussed.

This paper was discussed by Drs. Hugh Morgan, Alfred Blalock, Eugene M. Regen and W. de Gutierrez-Mahoney.

3. "Experimental Production of Glandular Cystic Hyperplasia in the Monkey," by Dr. Rucker Cleveland.

Three monkeys received 2,500 r. u. and three, 5,000 r. u. estrogen daily for three months. Proliferation of the endometrium occurred in all, and glandular cystic hyperplasia in three animals. These three had been castrated more than six months, and



had had as many as four and six biopsies by laparotomy.

The three animals without hyperplasia had been castrated recently and had not been previously biopsied. The possible relationship of reduced volume of endometrium and the length of the period of castration to production of hyperplasia experimentally and in women was discussed.

This paper was discussed by Drs. John Burch and Sam Clark.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Changes in the Human Organism Induced by Prolonged and Repeated Inhalations of Carbon Dioxide: Their Value in Premedication and Postanesthetic Therapy. Lucien Dautreband. *Anesthesia and Analgia*, November-December, 1940.

In a series of experiments in humans and animals the prolonged and repeated inhalations of carbon dioxide produced several favorable results—so favorable that it is recommended that it be used both as a preanesthetic measure as well as a post-anesthetic one.

There were found to be various lasting modifications in the human organism such as an increase in the percentage of hemoglobin, cardiac output, plasma volume, and urinary secretion. These factors improve the conveyance and distribution of oxygen, aid anesthesia by increasing vital capacity and complete expansion of the lungs which also reduces the risk of atelectasis. It also aids cerebral and coronary circulation.

### FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Artificial Fever Therapy in Pelvic Inflammatory Disease. Milton A. Darling, M.D.; James M. Berris, M.D.; and Max Newman, M.D. (from the Department of Fever Therapy, the Grace Hospital), Detroit, Michigan. 36: 2: 238, August, 1939.

Our criteria of cure is predicated on the absence of gonococci as determined by smear as well as the subsidence of symptoms. The ideal treatment for specific pelvic inflammatory disease in women might be postulated as one free from mortality, providing a cure in minimum time, leaving no sequelae, available to every woman regardless

of her economic status, and one which leaves the reproductive functions unimpaired. While the ideal by no means has been obtained, our experience with hyperpyrexia has yielded the following results with forty cases:

Three patients were cured with one treatment; twenty-five patients were cured with two treatments; five patients were cured with three or more treatments; seven patients were either unable or unwilling to continue treatments until cure was effected or failure could be determined.

Complete cure may be expected in upwards of eighty per cent of cases where three or more treatments are administered, providing the body temperature is maintained 106 degrees Fahrenheit for five to six hours per treatment.

The acute stage of the infection is no contraindication to the use of fever therapy. In fact, the more acute the symptoms, the more dramatic will be the result.

Repeated clinical examinations following treatment indicate that the functions of the female reproductive tract are not essentially altered.

Should fever therapy fail to effect a cure, the patient could readily undergo any other form of treatment deemed advisable.

The results obtained in treating forty patients with specific pelvic inflammatory disease by hyperpyrexia have convinced us of its efficacy and stimulated our interest in its continued application.

### INTERNAL MEDICINE

By R. B. WOOD, M.D.  
By D. R. THOMAS, M.D.  
Medical Arts Building, Knoxville

Malnutrition. N. P. Shumway, M.D. *Medical Clinic of North America*, November, 1939.

Malnutrition is a qualified form of nutrition—"the sum of the processes concerned in the growth, maintenance, and repair of the living body as a whole or its constituent parts" (Lusk).

Cathcart defined good nutrition as "the state of well-being which characterizes the individual, who is physically and psychologically sound." This is not easy in that physical and psychological soundness are variable factors, depending on the demands of a particular case. Speed, rapid reaction time may be more important than muscular power. While criteria for fitness may vary with groups, the fundamental principles for development of these criteria apply to each.

The physician's judgment of a given state of nutrition will be based on his previous concepts of nutrition, his training, and judgment, and this with certain personal factors, plus the findings of a given case, all go into the evaluation of a given case.

One should not accept the average of a group as normal, even the average of the higher income group, which is usually above the general average. Further, the laboratory in dealing with animal

experiments finds an appreciable gap between what constitutes maintenance, nutrition, and optimal states.

In the immediate examination, one assesses the physical state supplemented by history. Signs of both past and present states of nutrition are present and are to be evaluated.

The total nutrition is best noted by observation of the bony structure, especially for evidence of absence of proper mineral and vitamin supply in the formative period. The teeth bear evidence of this also. Body posture reflects the tone of muscles throughout earlier years. Total stature may depend on adequate nutrition.

Evidence of recent nutritional disturbances are found in the soft tissues as in muscle tone, in appearance of the skin, and in the blood.

There are innumerable factors that favor development of malnutritional states as diet, factors dealing with absorption, sunlight, etc. Physical environment, partly dependent on economic states as light, air, exercise, rest, all have a contributory value to the state of health, as does the psychological side. Happiness and contentment are often more important for good nutrition than the provision of excess of one or another constituent of the diet. Other factors are disease, individual requirements, and food.

Adequate alimentary nutrition depends on (1) adequate intake, (2) proper absorption of food, (3) utilization and storage after absorption. Adequate intake means adequate amounts of different food components, carbohydrates, fats, and proteins, along with minerals and vitamins. Conditions adversely affecting intake are ignorance, economic states, disease processes, physical and mental states.

Absorption depends on the integrity of the digestive tract, comprising digestive juices, gross anatomical defects, chronic passive congestive states.

Utilization is affected by increased demands as physical activity, fever, pregnancy, rapid growth, glandular imbalances, diarrhea. It may be impaired by toxemia, metallic poisons, endocrine disturbances, etc. Quoting Burnet and Aykroyd, "Nutrition is an economic, agricultural, industrial, and commercial problem as well as a problem in physiology."

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

**Pyelonephritis of Pregnancy.** George C. Prather. The Journal of Urology, 45: 2, p. 147, February, 1941.

The interesting aspect of pyelonephritis of pregnancy is discussed in this paper from three phases, the material being gathered at Boston Lying-In Hospital. They are: (1) results from the use of sulfanilamide in pyelonephritis of pregnancy; (2) incidence of recurrent pyelonephritis of pregnancy;

and (3) data on the relation of pyelonephritis to toxemia of pregnancy.

Prior to the last few years, sterilization of the upper urinary tract in a patient with pyelonephritis of pregnancy was an extremely rare occurrence. Only a few such cases could be recalled by the author over a ten-year period. Methenamine, caprokol, pyridium, and other urinary antiseptics in the overwhelming majority failed to produce the desired results. Cystoscopic treatments relieved the symptoms, but virtually never produced a sterile urine. The ketogenic diet as a form of therapy was not tolerated and the obstetrical service was not eager to have a group of patients bordering on acidosis who might start up in labor at an inauspicious moment. The mandelic acid program with its restriction of fluids was not desirable for the acutely ill patient with pyelonephritis, and we hesitated to restrict fluids to a point where the medication might become effective even during an afebrile phase.

The dosage of the drug has been sixty grains per day given in four doses of fifteen grains at six-hour intervals. In the series of fifty patients the drug had to be discontinued in only one instance because it was badly tolerated before five consecutive days of medication. Results may be divided into three groups. The first group includes those whose urine becomes sterile during the period of medication and maintained a sterile urine during the remainder of the pregnancy, even though the medication was discontinued. Of the fifty patients observed, thirty-three (sixty-six per cent) came in this group cured with sulfanilamide. The second group is composed of those whose urine becomes sterile while taking the drug, but in whom an afebrile pyuria recurs some time during the remainder of the pregnancy. There were nine patients (eighteen per cent) in this group. The last group consisted of those in whom urinary sediments were not improved during the period of medication which was represented in this study by eight (sixteen per cent). The results in the author's experience with sulfanilamide in the urinary infections associated with pregnancy indicate that it is by far the most effective therapeutic agent which we have used. No ill effects on the fetus or any unusual complications in the patients so treated have been observed.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**When Is an Eye Dangerous as to Producing Sympathetic Ophthalmia? Sympathetic Ophthalmia After Enucleation of an Eye Injured Six Days Previously.** A. Fuchs. American Journal of Ophthalmology, February, 1941.

To demonstrate that the danger of sympathetic ophthalmia may exist before the end of the second



week, and that to wait for inflammatory signs in the second eye is very dangerous, Fuchs reports the following case. A man of sixty-two years injured his left eye while splitting wood. At the clinic an irregular perforating wound was found at the outer lower side of the limbus with prolapse of the uvea; two-thirds of the anterior chamber was filled with blood. As there was no perception of light after six days, the left eye was enucleated. Anatomic examination showed foci of lymphocytes with some epithelioid cells in the choroid. Nineteen months later the patient returned with iridocyclitis of the right eye, evidenced by numerous recent gray precipitates, opacity of the aqueous, and intense swelling of the iris. The inflammation subsided, and after six months the eye was free of any inflammation. It could not be ascertained when the inflammation had begun, but Fuchs assumed the interval to be one or two months after enucleation. Every eye with a serious perforating injury ought to be removed at once if vision cannot be preserved or restored. Fuchs warns against evisceration, as a great many cases have been reported in which sympathetic ophthalmia followed this procedure.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

Roentgen Ray Therapy in the Treatment of Herpes Zoster. P. McCombs, A. Tuggle, C. M. Guion. *The American Journal of the Medical Science*, 200: 6, pp. 803-809, December, 1940.

Herpes zoster is a painful disease, but except in case of involvement of the eye is not a dangerous disease. It is due to an inflammatory or irritative lesion of the sensory extramedullary ganglia of the cranial nerves or of the posterior root ganglia of the spinal nerves. The pain is the most distressing symptom, and the paper is written because the authors feel that roentgen therapy offers the best single method of relieving the pain and they recommend its trial before alcohol injections or more drastic surgical methods are undertaken.

The series consists of 123 cases seen in hospital and private practice, seventy-two of whom received X-ray treatments and fifty-one of whom did not receive X-ray treatments.

There were forty-eight males and seventy-five females and seventy-six of the cases occurred after fifty years of age. Any of the spinal nerves may be involved, but the thoracic nerves are most commonly affected.

### METHOD OF TREATMENT

At present the patients are given 200 r daily or every other day for five or six treatments, using 200 kilovolts through one millimeter of copper and one millimeter of aluminum filter at fifty centimeters distance. A six by fifteen centimeter portal

is used directly over the spinal root ganglia of the nerves involved.

### RESULTS OF TREATMENT

The largest number of cases were treated during the first week of the disease, the onset of vesiculation being considered the onset of the disease. In the group of cases treated by X-ray, forty-six per cent were relieved of pain within eight to fourteen days, whereas only sixteen per cent of the control group were relieved within this period. Furthermore, it required twenty-eight to sixty days to cure thirty-five per cent of the group that did not receive roentgen rays.

Thirty-nine of the forty-four cases (eighty-nine per cent) treated in the first seven days of the disease were completely relieved of symptoms. Five others of this group were improved, while three received no benefit.

Of the eleven cases treated between the eighth and the fourteenth day, eight (seventy-two per cent) were completely relieved, two were partly relieved, and one was not benefited.

Of the four cases treated between the fifteenth and the twenty-eighth day, two (fifty per cent) were relieved and two were not relieved.

Of the thirteen cases treated after the twenty-ninth day, seven (fifty-four per cent) were relieved, one was partly relieved, and five were not benefited. This analysis shows the importance of treating the lesions early.

### DISCUSSION

We have already shown that the success of this treatment is directly dependent on the duration of the disease. We have found repeatedly that treatment has been delayed because the physician has considered the extent of the cutaneous lesion at the onset too insignificant to warrant roentgen ray treatment. Then, because of persistent pain, he has referred the patient for treatment after the optimal date for relief has passed.

We have observed that the symptoms may be exaggerated after the first treatment. It is, therefore, important to warn patients of this reaction and advise them that improvement will follow subsequent treatments.

There is a tendency for patients to desist from roentgen therapy after a few treatments because of the relief from pain and because the local lesions do not show further spread. It is important to insist on the full course. Although some may respond to smaller doses, we have found it wise to give the total of 1,000 to 1,200 r because, after a brief interval in an occasional one of our insufficiently treated cases, there has been a recurrence of the pain and parathesias which were relieved by further treatment.

## CONCLUSION

From this study of seventy-two cases of herpes zoster, we believe that roentgen therapy is an ideal agent for the relief of herpetic syndrome and that better results will ensue if adequate treatment is started early.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
188 South Bellevue, Methodist Hospital  
Doctors Building, Memphis

## Pectin in the Treatment of Various Types of Wounds.

Charles A. Tompkins, M.D., et al. *Surgery, Gynecology, and Obstetrics*, 72, No. 2: 222 (February), 1941.

Since the experimental work to explain the beneficial effects of pectin preparations in diarrhea of infants showed that the pectin had some bactericidal effect, the authors decided to use it in the treatment of infected wounds. Later it was shown that nickel present in pectin produced the bactericidal effect, but encouraging results were being obtained in wounds treated with this preparation whether it contained nickel or not.

*Method.*—Pectin aqueous solutions of from two per cent to ten per cent (a paste), sterilized by autoclaving or by the addition of merthiolate which prevents the growth of fungi otherwise present, is applied to the lesion either directly or with sterile gauze saturated with the solution. Dressings should be changed often enough to keep them moist. To prevent rapid evaporation the gauze saturated with pectin is covered with vaseline gauze or oiled silk. Dressings are changed daily or in the case of sequestrectomies three times a week.

Among the cases treated were decubitus and trophic ulcers, chronic discharging wounds as osteomyelitis, operative wounds with secondary infection, superficial wound infections, and traumatic wounds. The improvement in the appearance of the wounds after beginning the pectin treatment was prompt; aside from the bactericidal effect the hygroscopic action of the pectin results in a decrease of edema in the granulations promoting healthy wound healing. Other advantages are that this method decreases the discomfort in the wound and prevents objectionable odors so often present.

No direct stimulating effect on epithelialization is claimed for pectin. In fact, when healthy granulations are established and epithelialization begins, this treatment should be discontinued. The pectin treatment seems to be particularly applicable in wounds following sequestrectomy in osteomyelitis.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Pyelonephritis of Pregnancy. George C. Prather. *Journal of Urology*, February, 1941.

The findings on three phases of pyelonephritis of pregnancy, obtained from material of the Boston Lying-In Hospital, are presented. They are (1) results from the use of sulfanilamide, (2) incidence of recurrent pyelonephritis of pregnancy, and (3) data on the relation of pyelonephritis to toxemia of pregnancy.

Prior to the use of sulfanilamide, it was rarely possible to obtain a sterile urine in pyelonephritis of pregnancy. While the methods of treatment would keep the patient in an afebrile condition and aid in carrying the majority of them through pregnancy, she still had bacteria and pus in the urine. The ketogenic diet was not well tolerated and kept the patient bordering on acidosis, and mandelic acid with restricted fluids was not desired.

The dosage of sulfanilamide used has been sixty grains a day, divided in four equal doses. Fifty cases of pyelonephritis during pregnancy were observed in this group. Only one of the fifty cases failed to tolerate the drug. Of these cases sixty-six per cent were cured with sulfanilamide. In eighteen per cent the urine became sterile during medication, but had an afebrile recurrence during the remainder of pregnancy. In sixteen per cent there was no improvement. Forty-seven of the fifty patients went to term and were delivered of normal babies. Two delivered prematurely and one had the pregnancy interrupted. The drug apparently had no ill effects on the babies.

There were also fifty patients with post-partum urinary tract infection who received sulfanilamide medication. In twenty of these cases constant bladder drainage was instituted because of an atonic bladder. Of these twenty in only five per cent did the urine become sterile. Of the remaining thirty cases eighty per cent were cured with the drug.

Recurrent pyelonephritis associated with pregnancy was the second group studied. There were seventy-two cases who had pyelonephritis of pregnancy and who returned later to the hospital with one or more pregnancies. Of this group sixty-five per cent of the subsequent pregnancies were normal, twenty-three per cent had a recurrent pyelonephritis in their subsequent pregnancy.

Of thirty-six patients whose urines were still infected, forty per cent had pyelonephritis in their subsequent pregnancy. These findings emphasize the importance of a cure of the urinary infection during the interval between the pregnancies.



Of forty-three patients from whom a sterile urine was obtained post partum following their initial pyelonephritis of pregnancy, only 18.5 per cent had pyelonephritis in their subsequent pregnancy.

By entering pregnancy with an infected urine, the patient has only about one chance in two of avoiding a febrile attack. If she begins pregnancy with a sterile urine, her chances of a recurrent attack are about one in six.

These same series of patients who had had pyelonephritis of pregnancy were reviewed to ascertain how frequently toxemia of pregnancy followed pyelonephritis. Of the seventy-two patients with pyelonephritis who returned later with subsequent pregnancies, only twelve per cent were complicated by toxemia.

This author concludes from his data that pyelonephritis is not a cause of toxemia of pregnancy.

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No. 4

## SEVEN CORRECTABLE CONDITIONS OCCASIONALLY LABELED IDIOPATHIC EPILEPSY\*

T. F. FRIST, M.D., Nashville

There are over 500,000 cases of so-called idiopathic epilepsy in this country, more cases than there are of advanced tuberculosis, and more than there are of diabetes.

There is no chronic disease that carries a more deplorable stigma than does idiopathic epilepsy. It is because there are so many correctable conditions that have been and are still being labeled with the stigma of epilepsy that we have become interested in this condition. There are innumerable conditions that cause convulsions, and are occasionally labeled epilepsy, such as fevers of childhood, cerebral injuries, advanced arteriosclerosis, dehydration, etc., but these conditions are self-limited and the diagnoses are soon cleared up. However, we have been particularly impressed with seven conditions that almost entirely simulate either petit mal, or grand mal seizures, and go for years with such a diagnosis, or die without the correct diagnosis ever being made. It is our purpose, therefore, to briefly present the essential findings and a typical example of these conditions so that they might come to our minds each time we see a patient with chronic recurrent syncope, or convulsions.

The first, and I believe the most common, is the hypersensitive carotid sinus. The

carotid sinus is the bulbous dilatation at the bifurcation of the common carotid artery. In some individuals this nerve plexus becomes hypersensitive, and irritation of it causes syncope, convulsions, urinary, and fecal incontinence, and the other signs and symptoms similar to those seen in idiopathic epilepsy. The mechanism of the symptoms is produced in three different manners.

1. The vagal type—with the efferent impulses traveling over the vagus nerve to produce sinoauricular, or auricular ventricular block—with resultant asystole and syncope.

2. The depressor type—the efferent arc of which passes over the aortic nerves and causes vasodilatation and resultant hypotension, bradycardia, and syncope.

3. The cerebral type in which syncope occurs without cardiac change.

The diagnosis can usually be made by making rather quick, firm pressure on the carotid bulb. It is quite important to first carefully locate the bulb. This is not difficult, as it is usually easily felt just under the angle of the jaw. The pressure is maintained with slow massage for about thirty to forty-five seconds.

I would like to present briefly two cases to illustrate this. One is a sixty-year-old white optometrist who for several years

\*Read before the Tennessee State Medical Association, Chattanooga, April 9, 10, 11, 1940.



has been having attacks of vertigo and syncope of brief duration. He would drop his fork at the table, or drop a pair of glasses while fitting them, with a momentary loss of consciousness. On several occasions he has fainted on the street without any provocation. He was examined repeatedly by different examiners with a diagnosis of petit mal, cerebral arteriosclerosis, etc. Our general examination was entirely normal with no evidence of generalized arteriosclerosis. Pressure on the left carotid sinus immediately produced vertigo and syncope with muscular twitching similar to that described by him.

This man was of the old school and wore a very high, tight, stiff collar. He was advised to get a size larger, soft, low-neck collar. His attacks became much less frequent and subsided completely when he was given belladonna to inhibit the vagal effect. He has had no further attacks during the past two years except on one occasion when he left off his belladonna two weeks.

The other case is a woman who is fifty-two and was first diagnosed in a local hospital in 1927 as having idiopathic epilepsy of ten years' duration. She had had syncope attacks and had received several severe injuries. In retrospect these injuries were probably due to the short or absence of aura, during which she did not have time to prepare herself for an attack. She continued to have the attacks off and on for the next eight years, but with less frequency. However, three years ago the

attacks became more frequent and following one in which she received a major injury she returned to the hospital. At this time she was again thoroughly studied, including ventriculograms, but she was discharged with the diagnosis of epilepsy. Several weeks later we saw her and during the course of examination made pressure on the carotid sinus, producing a typical attack of epilepsy with generalized twitching and syncope. The EKG showed asystole. (Cut I.) She also had depressor effect with a drop in blood pressure. Her attacks were greatly reduced in frequency by atropine and ephedrine, but not entirely controlled. Dr. Cobb Pilcher then did a denervation of the left carotid sinus. She had only one slight attack in three months, and as the right carotid was slightly sensitive, a denervation of this sinus has recently been done. Thus far she has gotten along satisfactorily without any further attacks.

Nearly all these cases can be relieved in one of four ways: with atropine, which inhibits the vagus nerve; with ephedrine, which relieves the depressor type by boosting the blood pressure; with vitamin B, which decreases the sensitivity of the carotid plexus; or finally by denervation which abolishes all abnormal responses of the foregoing types.

The second condition, and the one which perhaps most nearly simulates idiopathic epilepsy, is hypoparathyroidism, or chronic tetany. We all are entirely familiar with tetanic convulsions due to hypoparathyroid-

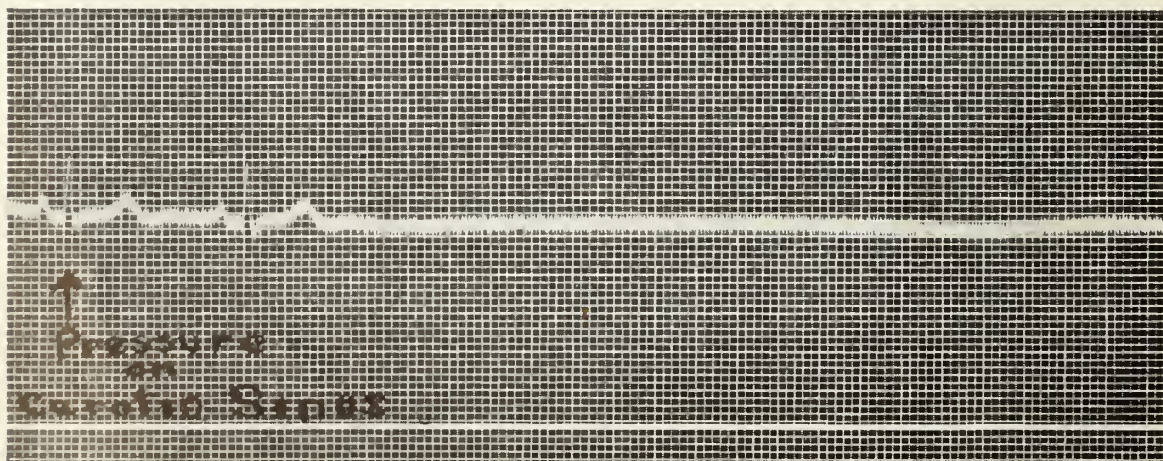


Fig. I.

ism which results from resection of or injury to the parathyroid gland during a thyroidectomy.

Likewise we are familiar with the tetany due to alkaloses which results from ingestion of too much alkali, or excess vomiting. A history would always clear up this diagnosis, but a diagnosis of a true spontaneous hypoparathyroidism is extremely difficult to make unless we consider it and then it becomes very simple.

I believe the essential findings of this disease will all come out in a brief case report.

This patient is a male twenty-eight years of age. At the age of twelve years he began to experience attacks of dizziness and light-headedness followed by falls, bodily rigidity, and tetanic contraction of the limbs. This was accompanied by severe cramping in the arms and calves of the legs. This type of spell continued for a period of three years, attacks occurring every two or three months. At the age of fifteen the character of the attacks changed somewhat in that he would have an aura characterized by lethargy, then dizziness, a fall, and unconsciousness, his muscles drawing in typical tonic contractions. These attacks would occur about eight or ten times a year, gradually become more frequent and severe. During an attack he would often bite his tongue, become cyanotic, and have clonic contractions. He was seen by many doctors with a diagnosis of epilepsy. At the age of twenty, after eight years of having terrifying fits, and being labeled an epileptic, it was discovered that he had a low blood calcium, being 6.6 milligrams, also he had a positive Chevestek sign, positive Trousseau sign, etc., and a diagnosis was made of chronic tetany on the basis of hypoparathyroidism. For the next few years he got along quite well by taking calcium; however he did have a very occasional slight attack. It was not until about four years after he had been diagnosed as having chronic tetany that it became a proven and recognizable fact that not only a low calcium causes tetany but also a high blood phosphorus, or a calcium-phosphorus imbalance. Since the realization and utilization

of this fact he has had only about four attacks. Following one of these attacks he was discharged from a C. C. C. camp because of idiopathic epilepsy. However, each of these attacks has been a direct result of becoming careless with his diet, or omitting his calcium medication.

The third condition is that known as orthostatic hypotension which is a relatively uncommon condition. This term was first applied in 1925 by Bradbury and Eggleston to a condition characterized chiefly by a marked fall in the systolic and diastolic blood pressure when the patient changes from the recumbent to the erect position.

The chief symptoms and abnormalities of orthostatic hypotension:

1. Weakness, dizziness, blurring of vision, syncope, and sometimes convulsions when the patient assumes an erect position. (This is due to a sharp decrease in systolic and diastolic blood pressure usually from thirty to eighty points. It is worth emphasizing that a drop of only ten to fifteen millimeters of mercury when the patient changes from lying to erect position is certainly not diagnostic of orthostatic hypotension.

2. Deficient sweating either localized or generalized.

3. A failure of the pulse rate to increase when the patient assumes the erect position.

4. Accentuation of symptoms during hot weather.

5. Patient secretes a larger volume of urine when he is recumbent than when he is erect.

The chief change in cases of orthostatic hypotension is a loss of orthostatic vasoconstriction necessary to maintain normal blood pressure against the force of gravity.

A beautiful example of this condition is that of a forty-year-old white-man who first began to have symptoms three years prior to admission to Vanderbilt Hospital. The symptoms consisted of blind, dizzy spells associated with faintness and weakness, and usually relieved by squatting or lying down, invariably coming on when he was in the erect position. On two occasions he had severe attacks while working and was told



TABLE I

## ORTHOSTATIC HYPOTENSION

Blood pressure readings.

<i>Reclumbent Position</i>	<i>Standing Position</i>
145/100	66/40
138/78	50/35
152/102	70/50

that he had a sunstroke. During this three-year period the attacks gradually became more frequent and severe and a few days prior to admission he had several attacks with dizziness, weakness, coarse trembling of the extremities, syncope, and frothing at the mouth. Also for many years he had nocturia two or three times nightly. His entire physical examination was essentially negative except for the blood pressure. Interesting studies were made of the patient in every position and consistently his recumbent blood pressure was sixty to eighty points higher than the erect blood pressure. He was given three-eighths grain of ephedrine sulphate three times a day, and elastic bandages were applied to both legs. He improved immensely, and when last seen eight months after being discharged from the hospital, he was practically asymptomatic and states that he had had little or no dizziness and had not had a single fainting spell.

The fourth condition that one must consider before a diagnosis of epilepsy is made is hyperinsulinism or hypoglycemia. Dr. Seale Harris of Birmingham was one of the first to recognize this condition and has reported many cases that had previously been diagnosed as epilepsy.

Our case is that of a thirteen-year-old white girl who was seen in January 1932, at the age of nine with a ten months' history of attacks of staggering, convulsive movements, and short periods of unconsciousness. These attacks first occurred every three or four weeks, and there was never any aura, biting of the tongue, or personal injury. When first seen the physical examination was essentially negative as were the routine laboratory studies, and she was discharged with a diagnosis of either idiopathic epilepsy or hysteria. She was again seen four years later, the attacks having become more frequent and severe.

On this admission to the hospital a blood sugar determination was made and she was found to have a fasting blood sugar of forty-one milligrams. Three hours after a glucose tolerance test the patient was found extremely drowsy with cold, clammy hands, dilated pupils, convulsive movements of the shoulders, twitching of the hands and face. Blood sugar during this attack was thirty-six milligrams. It was felt that she might well have a pancreatic tumor and on exploration Dr. Barney Brooks did find an adenoma at the junction of the middle and distal third of the pancreas. He removed the adenoma and as much of the additional tumor tissue as possible, but was afraid that all of the tumor tissue was not excised. For several days following the operation the patient's blood sugar was normal, or a little high, but it then returned to the low average of about fifty-six milligrams. No further convulsions occurred for three months, but then again the attacks recurred. It was desired to do another operation, but the patient's mother refused. When last reported she was having an occasional attack and would not cooperate by following the prescribed diet.

The fifth condition is that in which we see convulsive seizures as not infrequent manifestations of cerebral neoplasm. Sargent reported an incidence of 30.9 per cent in a series of 274 cases. In Bailey's series of cases at the University of Chicago 25.7 per cent of the patients suffering from tumor of the brain had generalized convulsions. The most frequent locations of tumor causing convulsions are in the frontal, parietal, or temporal lobes. That a convulsion may be the initial symptom of a cerebral tumor is well established, as the symptomatology in approximately fifteen per cent of all cases of the tumor of the brain is ushered in by an epileptic seizure.

The early recognition of an intracranial growth is usually essential if surgical treatment is to be permanently affected. At the time of the first convulsion many patients have sufficient neurological abnormalities to make correct diagnosis possible. There are, however, a certain number in whom no abnormalities can be found on examina-

tion. One must rely on more specialized procedures, such as ventriculograms. However, occasional simple roentgenogram of the skull shows calcification within the neoplasm.

We have an excellent case to illustrate this finding. It is that of a young man who is now twenty-five years of age. He enjoyed excellent health until the age of eighteen, at which time he had a generalized convulsion characterized by a prodromal of general nervousness, twitching of fingers, and a transient loss of consciousness. This was shortly followed by a generalized convulsion with a cry and muscular twitching, a hyperextension of body and extremities, and foaming from the mouth. There was no biting of tongue. Following the attack he felt weak and groggy, and had a headache. Similar attacks occurred about four to six times a year and gradually increased in frequency. He was seen by several observers, all of whom made a diagnosis of idiopathic epilepsy. On May 16, 1938, six years after having been labeled epilepsy, he was referred to Doctor McKinney. Both general and neurological examinations were essentially negative, except for hyperactive deep reflexes. There was no Babinski present, and the findings were normal with no evidence of choked disc. X-ray of the skull was made which showed evidence of a small area of calcification in the right posterior brain. He was then taken to the hospital where a lumbar air injection was done and encephalograms were made which showed evidence of a globular protrusion extending

into the right lateral ventricle. He was operated by Doctor McKinney on May 19 and a tumor-astrocytoma was removed from the right parietal lobe. This is two years postoperative. To date he has had no further attacks of epilepsy and is considered cured.

The sixth condition, sometimes a real problem in differentiating epilepsy, is congenital heart block. Again a report of a case will best serve to bring out the essential features. This is the case of a little girl aged four years who had always been moderately healthy, but who was known to have a rather slow pulse most of her life. She fainted rather suddenly while playing in the yard and had a convulsive seizure, thought to be due to a stomach upset. However, during the next three weeks, she had quite a number of convulsions without any associated fever, vomiting or other conditions associated with the usual childhood convulsions. The only abnormal finding was a consistently low pulse rate ranging from forty to forty-eight and during the attack as low as thirty-six. The electrocardiogram showed a complete dissociation of the P, or auricular wave, and the QRS, or ventricular complex, indicating a bundle branch block. (Cut II.) This child was relieved by atropine and ephedrine, and has gotten along well during the past few years without particular trouble and happily not labeled as an epileptic.

The seventh and final condition is that in which convulsive seizures may occur as a result of involvement of the central nervous

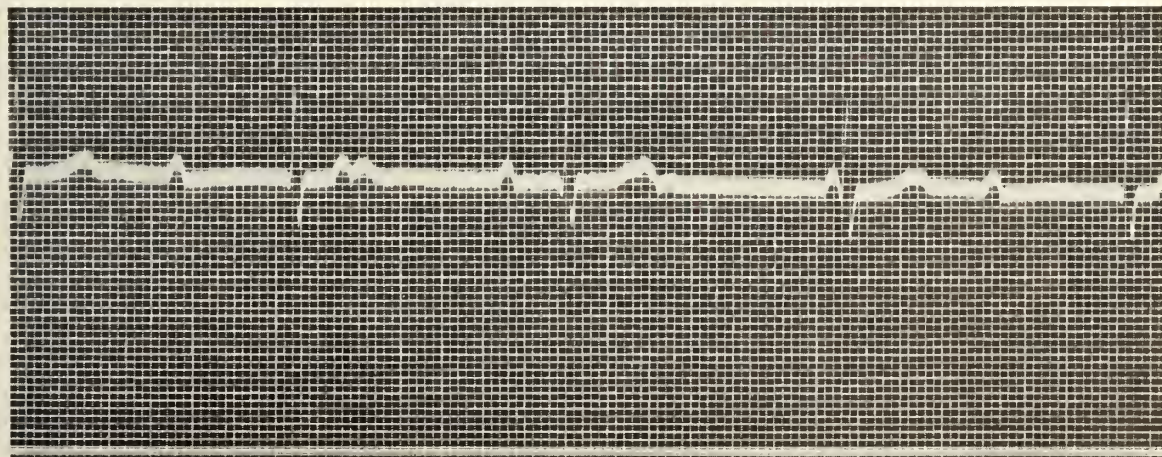


Fig. II.—Complete heart block.



system in either the secondary or tertiary stage of syphilis. On a recent study at the University of Iowa Hospital of 100 cases of epilepsy fifteen per cent were due to syphilis of the central nervous system. In the early secondary stage there is frequently a mild meningeal reaction that occasionally manifests itself by a generalized convulsion. In the late secondaries the meningo-vascular type of syphilis occasionally manifests itself by epileptic seizures. Tertiary lesions, particularly gumma, and dementia paralytica frequently cause convulsions. The gummatous lesion simulates almost entirely the neoplastic growths. In the Iowa series fourteen of the fifteen cases had a positive blood reaction. The fifteenth patient died in status epilepticus and a Wassermann was not run.

Time does not permit the citing of a case to illustrate this type of epilepsy, but the diagnosis is so simple that all one has to do is to remember that neurosyphilis causes a good percentage of convulsive seizures.

In conclusion, I would like to impress upon all of us that in the next case of vertigo, syncope, or petit mal, convulsions, or grand mal we see, let us consider carefully the following conditions and procedures. Nearly all of these can be carried out in the home, or at our office:

Carotid sinus syndrome—pressure on carotid bulb.

Hypoparathyroidism—blood calcium determination.

Orthostatic hypotension—recumbent and erect blood pressures.

Hypoglycemia—blood sugar determination.

C. N. S. syphilis—blood and spinal fluid Wassermann.

Brain tumor—ventriculogram.

Congenital heart block—pulse rate and electrocardiogram.

#### DISCUSSION

DR. C. C. TURNER (Memphis): Doctor Frist has given us a very adequate exposé of seven conditions frequently confused with, or misidentified as, idiopathic epilepsy. Again there is impressed upon us the necessity of obtaining a painstaking history and biography, as well as a careful clinical investigation of every patient presenting one, or a combination of all, of the following symptoms—

vertigo, syncope, and convulsions. Unfortunately, too many of us are prone to relegate this group to the ash heap labeled idiopathic epilepsy, and to prescribe a few luminal tablets, a diet, restriction of fluid intake, and a purgative regime, without further thought or a more careful analysis into the real underlying conditions.

Fortunately, the consideration of idiopathic epilepsy as a disease entity is rapidly going into discard. Emphasis for a different conception of the epilepsies is largely due to the work of Cobb, Lenox, Cushing, Brain, and others, whose industry and untiring efforts have resulted in the grouping of all such cases in the category of the "convulsive disorders."

Idiopathic epilepsy may still be considered as a symptom complex of a number of conditions. There is hardly any condition known to the medical man that may not present syncope, vertigo, or convulsions at some stage of the disease. Among children convulsions are not infrequent in association with a variety of different affections. Spasmophilia is not an uncommon accompaniment of childhood, but is not necessarily a forerunner of epilepsy in the adult. Syncope is a common symptom in the adult female, and in an emotional patient is not infrequently of psychogenic origin. But this does not indicate the presence in every case of petit mal. Of the triad, vertigo is probably the most frequent and occurs with too many medical conditions to enumerate.

In all of these the constitutional predisposition must be considered as a factor, especially with reference to convulsions. Whether we refer to a patient's convulsive threshold, his sympathetic-parasympathetic balance, or his hereditary equipment, we are in reality concerned with his constitutional predisposition to convulsions. Certainly we know that among certain individuals affected by similar maladies some will exhibit convulsions, while the remainder under identical physical and psychogenic circumstances will not. Burr states that convulsions may be evidence of congenital instability of the germ cell. He believes that the predisposition to nervous diseases is inherited, but that the type of disease which appears depends not only on predisposition, but upon causes which arise in utero, or even after birth. This is the so-called psychobiological concept, which is now on the ascendancy among neurologists and psychiatrists as the chief factor in the production of mental and nervous diseases. It largely explains why epilepsy is so frequently seen among siblings of a certain genesis.

I believe that Doctor Frist's statistics of convulsive phenomena associated with brain tumor to be somewhat misleading. He quotes statistics of Sargent and Bailey, whose percentage of convulsions with brain tumor are thirty per cent and twenty-five per cent, respectively. It must not be overlooked that these were verified brain tumors and does not indicate that the incidence of convulsions in a large general group of cases run this high a percentage as resulting from brain tumor. As a

matter of fact, convulsion is *not* a symptom of the majority of cases of cerebral neoplasm. Only about five per cent of the convulsive disorders result from brain tumor. Only a slightly higher percentage than this result from all types of organic brain pathology. Which brings us in disagreement with the dictum of Hippocrates which was "for the cause of epilepsy look in the head."

DR. JESSE C. HILL (Knoxville): Mr. President and members of the Tennessee State Medical Association:

Doctor Frist has given us a good paper, one that has taken a great deal of time to prepare, and one with much medical food for thought.

Patients with epilepsy or falling sickness are some of the most pitiful cases we have to treat. We find the condition in the rich and in the poor.

Doctor Frist's good paper could not only apply to epilepsy, but any other condition. He emphasizes the importance of going into the case, treating the patient as the doctor would like to be treated. A worth-while paper on diagnosis.

No case of epilepsy should be classified as an idiopathic epilepsy until every condition in medical science that could cause such symptoms has been eliminated.

The doctor who wrote the paper is the type of man we need to practice medicine today. He believes in research and does not want to stop until he has done all he knows and all others know in the treatment of his patients.

I have examined hundreds and hundreds of these patients in institutional work and private practice in East Tennessee. Such cases take a great amount of time, but my end results have not been as good as Doctor Frist's. Many of the cases have been through most of the so-called big clinics of the United States, have been examined, and sometimes everything that could be taken out, even to all the money in their pocketbooks. They come home apparently improved, get along for a while, then things turn bad again, and I have to put them back on Dercums treatment, but I would be the last one to criticize the good doctor in the good work he is doing.

I believe the time is not far off when we will not hear the term idiopathic epilepsy, as a cause of said symptoms in all cases can be found.

In closing I commend Doctor Frist for his most instructive paper.

DR. W. B. ANDERSON (Nashville): I think this is one of the most useful papers we have heard

here. No doubt many people have the stigma of epilepsy fastened onto them who could be relieved if it were properly diagnosed.

I should like to ask Doctor Frist a question, and I will briefly report three cases following toxemia of pregnancy.

In 1905, I delivered a woman who had had no prenatal care, but I found her in eclampsia. There was no history to this case except her toxemia of pregnancy. There was no history of epilepsy at all, and none of her kinspeople had had it. That, however, was the beginning of a series of petit mal seizures that have followed her up to the present time.

In 1924, I delivered a woman who had eclampsia, and that was the beginning of her series of petit mal epilepsy seizures, so-called, which lasted throughout. She is still living and still having her epileptic seizures.

The other case was not my case, but she has the same kind of seizures, the petit mal seizures, and her case has lasted over twenty-five years. I should like to know what the pathology is. None of these women give any history of any epilepsy in the family.

DR. THOMAS F. FRIST (closing): Doctor Anderson knows that I am not a neuropsychiatrist by any means. I was interested in this subject principally because of the medical aspects of the things enumerated.

I cannot give him a definite answer to his question, I do not think anyone can, except perhaps to suggest that those three individuals had a fertile brain for epilepsy due to some hereditary background or something of that kind. The convulsion may have been precipitated by the cerebral edema from the eclampsia with perhaps hemorrhage or the type of thing we see so frequently in the eye grounds with eclampsia.

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## CHOICE OF ANESTHESIA IN ACUTE SURGICAL EMERGENCIES\*

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The object of this paper is to bring to the attention of the physician giving anesthetics some practical points to be taken into consideration in choosing the best anesthetic agent for a given operation.

The choice of the anesthetic agent best adapted to a given case is an individual problem. For example, we cannot arbitrarily say that a certain anesthetic should be used in all cases of acute appendicitis. There are many factors to be considered in the choice of the drug to be employed. The ultimate safety of the patient is of prime importance and heads the list of factors that influence the choice of the agent. Efficiency of the anesthetic is of next importance since the surgeon cannot do his best work if hampered by inadequate relaxation. Sise<sup>1</sup> states that the criterion of choice is the end result of anesthesia and operation combined and not considerations concerning the anesthesia alone.

I shall not attempt to cover the subject, "Choice of Anesthesia," for elective surgery, but only operations that might be classified as emergencies, such as traumatic injuries, acute surgical conditions that demand immediate operation, and emergency office surgical procedures.

I have divided the subject into three divisions:

1. Premedication in acute surgical emergencies.
2. Choice of anesthesia in some common major emergencies.
3. Choice of anesthesia in ambulatory surgery.

### PREMEDICATION

The physician giving anesthetics knows how difficult it is to administer a general anesthetic to a patient who has had no preanesthetic medication. The patient is apprehensive, the excitement stage is prolonged, and to obtain adequate relaxation the anesthesia must be carried to a dangerous level. The hypodermic administra-

tion of morphine and atropine twenty to thirty minutes before the operation is of little or no value as preanesthetic medication since the maximum effect from morphine — hypodermically — occurs in from sixty to ninety minutes after administration. What then is to be used as preanesthetic medication for these acute surgical emergencies? Knight<sup>2</sup> relates an interesting incident which has been helpful to me in solving this problem of preanesthetic medication in emergency surgery: "About twelve years ago a man came to my office, said he was a morphine addict and very much needed some morphine relief. I called the federal narcotic office, checked his identity, and obtained permission to administer some morphine. When I had prepared it the man said: 'May I please give it myself?' He threw his handkerchief around his arm, held it with his teeth, tightened his fist, adroitly inserted the needle into a vein in his forearm and sighed with relief as he pressed the piston home."

Since then Knight has used morphine intravenously when immediate effect is desired. He states that overdosage may be avoided by dissolving the dose in at least two cubic centimeters of water and injecting slowly. In cases where there is no pain to act as a guide in the dosage, injection should be stopped as soon as any of the following symptoms appear: dizziness, weakness, sleepiness, or tingling, numbness, or aching in any part of the body. Too rapid injection may cause twitching or even convulsions.

Certainly this method of morphine administration is the answer to preanesthetic medication in emergency surgery.

### ACUTE SURGICAL EMERGENCIES

Ten years ago there were few anesthetic agents available; today there is a large group of drugs to choose from, each of which is particularly well adapted to a specific group of surgical procedures.

Some of the more common emergencies that require immediate surgery may be classified:

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## HEAD

Decompression of skull.

## CHEST

Gunshot wound.

## ABDOMEN

Upper—Perforated peptic ulcer; gunshot, etc.

Lower — Acute appendicitis; hernia (strangulated); suprapubic cystotomy for acute urine retention; internal hemorrhage.

## EXTREMITIES

Compound fracture; amputation.

The anesthetic of choice for decompression of the skull, I believe, is cyclopropane gas anesthesia if equipment for its administration and a physician anesthetist familiar with its use is available. It is, no doubt, the least toxic to the patient for what may be a long operation. The intratracheal method of administration is probably the best since with it the anesthetist can be out of the way of the surgeons and a clear airway can be maintained with ease. The next choice if the gas were not available would be open-drop ether. The patient can be carried in a light plane of anesthesia, and if plenty of air is allowed this makes a very satisfactory anesthesia.

Here in our city it is not uncommon to have to administer an anesthetic to a patient with a gunshot wound of the chest. Cyclopropane gas anesthesia can be used in these cases, but if the chest wound is large it is difficult to maintain smooth anesthesia because of the loss of the gas through the wound. We have been using intravenous pentothal sodium quite successfully for our gunshot chests with the administration of oxygen throughout the anesthetic (and any other supportive measures that may be indicated). The patient tolerates the procedure very well. We feel that it is better than ethylene, nitrous oxide, or ether.

Acute abdominal emergencies may be divided into upper and lower abdomen. Probably the most common upper abdominal condition requiring immediate surgery is ruptured peptic ulcer. Upper abdominal surgery demands maximum relaxation so one of the agents offering this relaxation should be chosen.

Tucker<sup>3</sup> states that formerly they used spinal for these cases, but that now they advocate cyclopropane with the addition of enough ether to give adequate relaxation. Following general anesthesia the patient can be placed in Fowler's position earlier than following spinal anesthesia. Ether by the open-drop method gives good relaxation and is satisfactory if cyclopropane gas is not available.

Acute appendicitis is probably the most common lower abdominal condition demanding immediate surgery. If cyclopropane gas can be obtained, I believe, it is the ideal agent. Ether gives good relaxation and may satisfactorily be used. Spinal anesthesia produces beautiful relaxation and may be safely used if there are no contraindications to its use, such as extremes of age, spinal disease, etc.

Hernia, strangulated, or incarcerated, presents an acute emergency in which immediate surgery is indicated. Because of the perfect relaxation and absence of bowel distention or motility under spinal anesthesia, it is the agent of choice. In cases where the general condition of the patient is against general anesthesia, local novocaine infiltration by the surgeon may be done. If this does not give sufficient anesthesia, it may be supplemented by a few whiffs of gas (preferably cyclopropane) or if no gas is available light, open-drop ether will do.

Acute distention of the bladder which cannot be relieved by catheterization calls for suprapubic cystotomy. This can often be done under local novocaine infiltration alone. This is usually the anesthetic of choice, especially since the patient is generally up in years. Cyclopropane gas is an ideal anesthetic for cystotomy because plenty of oxygen can be given and it gives excellent relaxation. The induction is smooth, the maintenance easy, and the recovery prompt and accompanied by no undesirable symptoms. A low spinal anesthetic gives good relaxation, but I feel is hardly justifiable for such a short procedure if another anesthetic can be used. Ether is



not the anesthetic of choice, but may be the only alternative if no other agent is at hand.

Another abdominal emergency, which is often grave, is internal hemorrhage from any cause. Accompanying internal hemorrhage generally there is a certain amount of surgical shock. Control of the bleeding immediately is imperative, but measures to combat shock must be instituted.

Eversole<sup>4</sup> states that the most important therapeutic measure in combatting surgical shock is the restoration of fluids, which can temporarily be accomplished by the intravenous administration of a solution of five to ten per cent dextrose. Blood transfusion is valuable and when possible should be employed. About ten degrees of Trendelenburg is of value in combatting secondary cerebral anemia. The body heat should be conserved by the external use of blankets and hot water bottles. Stimulants such as coramine, metrazol, caffeine, and sedatives such as morphine are to be used only as indicated.

All of these measures can be carried out on the operating table while the preparations for surgery are being made. The anesthetic of choice regardless of the site of operation is cyclopropane gas anesthesia. The reasons for this are:

1. Safest from patient's standpoint.
2. Surgical relaxation equivalent to that produced by ether.
3. Rapid, easy induction with smooth maintenance.
4. High oxygen content (eighty-five per cent or greater).
5. Nontoxic to patient with no effect on any organ or basal metabolic rate.
6. Recovery rapid and smooth.

Spinal anesthesia is contraindicated in shock.

Compound fractures and mangling injuries of the extremities produce extremely ill patients which may be in a state of surgical shock. The same general measures should be used in these cases as for internal hemorrhage just outlined. The choice of anesthesia is the same.

These are but a few of the conditions that may be considered and these have been

handled only in a general way. There are so many factors such as age, general nutrition of the patient, patient's nervous stability, skill of surgeon and anesthetist, equipment available, type of injury, etc., that many times is not a question of the selection of the best anesthetic for a given case, but the skillful use of what is available. Ether in acute surgical emergencies is more often the anesthetic of necessity than the anesthetic of choice.

#### ANESTHESIA IN AMBULATORY PATIENTS

The physician who is doing general practice is frequently confronted with the problem as to what he should use for minor operative work on the ambulatory patient so that his patient may safely be taken home soon afterward.

Some surgical emergencies that might fall into this group are: incision and drainage of abscesses, myringotomies, repair of lacerations, painful dressings, or reduction of simple fractures.

Ferguson<sup>5</sup> states that for operations on ambulatory patients it is necessary to use an anesthetic which may be used without preoperative medication and which is rapid in induction and recovery with little or no aftereffects. The general anesthetics best fulfilling these requirements are nitrous oxide and divinyl ether (vinethene).

The use of divinyl ether (vinethene) requires no cumbersome, expensive, or complicated apparatus, as it can be given on a few layers of gauze by the open-drop method.

If a gas machine is available, nitrous oxide may be safely used for these short operations in the office and the patient can go home in a few minutes. Many times this equipment is not available and so gas anesthesia cannot be used. Ether, though safe, is not ideal because the induction is long, recovery is accompanied by undesirable symptoms, so it is not practical for short operations in the office. Ethyl chloride and chloroform are both rapid in induction, but are not recommended because of their toxicity and narrow margin of safety. Divinyl ether (vinethene), a relatively new anesthetic agent, has properties that make it ideal for short surgical procedures such

as those mentioned. It is an inhalation anesthesia for short anesthetics (less than thirty minutes). It is of greatest value when rapid, easy induction, with minimum postoperative effects, are desired. Being liquid, it is easily portable and may be given like regular ether by the open-drop method or by the closed method in a gas machine.

The *physical properties* of divinyl ether (vinethene) are similar to ordinary ethyl ether except that it is much more volatile and has a characteristic sweetish odor.

The *pharmacologic properties* differ from ether in that the induction and recovery from anesthesia are more rapid. The muscular relaxation obtained in divinyl ether (vinethene) anesthesia is equivalent to ether anesthesia and much better than that produced by ethylene or nitrous oxide.

#### METHOD OF ADMINISTRATION

In using the open-drop method the eyes are protected as in using ether, then four to eight layers of gauze are applied directly to the face and the divinyl ether (vinethene) allowed to drop at the rate of sixty to eighty drops per minute. In fifty to ninety seconds the patient is surgically asleep, usually without an excitement stage. The drug is much more volatile than ether, and so I have found a semiclosed system is necessary for smooth induction and maintenance. Care must be used not to push the induction and get the concentration too great or the excitement stage is more likely to be pronounced.

#### SIGNS OF ANESTHESIA WITH DIVINYL ETHER (VINETHENE)

Induction is rapid and the patient usually loses consciousness in twenty to forty seconds after the first inhalation. At this point if there is any excitement stage it will be manifest. Respiration is the most important single sign during divinyl ether (vinethene) anesthesia; the respirations are smooth and of equal volume, but somewhat rapid and more shallow than normal. The patient should remain pink and will provide the airway is clear. The eye signs are unreliable and no importance should be given them, as there may be dilation of the

pupils, roving eyeballs or actual blinking during surgical anesthesia. A low concentration of divinyl ether (vinethene) in the blood stream produces anesthesia so it is easy to pass from the level of surgical anesthesia to dangerous overdosage. The patient must be watched more carefully than with ordinary ether.

Divinyl ether (vinethene) is among the safe anesthetics, however, because, should overdosage occur, respiratory inhibition is the first sign as with ordinary ether. Administration of oxygen or artificial respiration usually restores respiratory activity at once because recovery from this agent is more prompt than from other more slowly acting inhalation anesthetics.

Ferguson summarizes its use in ambulatory cases thus: "The induction period is short, less than a minute (fifty to ninety seconds), and anesthesia can be maintained the duration of any proposed operation on an ambulatory patient. The recovery is prompt and the patient is usually able to get up from the table without help as soon as the operation is finished. Post-anesthetic nausea and vomiting are rare, occurring in about five per cent of our cases."

#### SUMMARY

The use of morphine intravenously as preanesthetic medication in these emergency cases is a great aid in producing an easy induction and smooth maintenance of anesthesia.

Cyclopropane gas anesthesia is the anesthetic of choice in most major surgical emergencies. If a physician skilled in its administration and equipment for its use is not available, it is not a matter of using the anesthetic of choice, but the anesthetic of necessity.

Sise, Eversole, and Woodbridge of the Lahey Clinic have this to say about cyclopropane: "Whenever a surgeon wants to operate under an anesthesia that carries a high oxygen supply (eighty-five per cent), produces a considerable degree of relaxation, promotes quiet breathing, offers speed of induction and recovery, harms no organ, and stops no functions, he may call for cyclopropane."



Divinyl ether (vinethene) is an excellent agent for ambulatory surgical emergencies because it is safe, requires no cumbersome equipment, the induction and recovery are smooth and rapid, and not accompanied by undesirable symptoms.

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#### DISCUSSION

DR. L. W. EDWARDS (Nashville): Doctor Ausherman has called our attention to a most important subject, a subject that is the most important part of any major surgical procedure, and the selection of the anesthetic in these surgical emergencies is most vital.

Ether given by the drop method has always been probably the safest inhalation anesthesia during all these years, and is at the present time probably for general use the safest agent.

There has been so much progress made in anesthesia during the past few years that unless the surgeon has kept abreast of the times in anesthesia, he will not be in a position to do the best by the patient in these surgical emergencies. We regard the choice of anesthesia as most important, particularly in emergencies.

We have had no experience with cyclopropane. We realize fully that cyclopropane given with oxygen enables one to give such a high percentage of oxygen with it that it is an excellent anesthesia and produces excellent relaxation, particularly for abdominal work. We have had the feeling that there was considerable risk from explosion in using cyclopropane, and for that reason the hospitals where I work do not use it. I realize full well that it is an excellent anesthetic, so far as the toxicity is concerned, and the giving of good relaxation. After all, the anesthetic agent that should be chosen in these cases is that agent that will produce the least toxicity and produce the widest margin of safety for the individual.

I should like to speak particularly of anesthesia in emergencies of the abdomen. We have been for several years using that combination of ether and oxygen, nitrous oxide, given through one of the modern machines, and we think it has a good many advantages over the method of open-drop

ether, not that it is any safer, but there is such a minimum amount of ether used, particularly with the breathing apparatus that we now have on the machine, that the patient is kept dry and you do not get the depressing effects that you get where so much ether is used. That is routine with us as inhalation anesthesia.

As to the preanesthetic drugs that should be used, I think they are important, as Doctor Ausherman has brought out. We do not use the barbiturates before inhalation anesthetics. We feel that these drugs abolish the reflexes and probably have a tendency to prevent the patient from emptying the bronchial tract and getting rid of secretions after the anesthetic, and we prefer the use of morphine and atropine as a preanesthetic preparation.

As to spinal anesthesia in abdominal emergencies, spinal anesthesia, of course, has not been popular until recent years. I believe, however, it is becoming more popular, and as surgeons learn more about spinal anesthesia and how to prevent complications and accidents from it, they are finding that it is a most valuable anesthetic. There has been a widespread feeling that the drop in blood pressure that accompanies spinal anesthesia at times is a danger associated with the administration. That, I think, has been greatly misunderstood. We have kept complete anesthetic records on 252 spinal anesthetics, and at the same time have kept a complete anesthetic record of the cases of inhalation anesthesia, and we find that the drop in blood pressure with spinal anesthesia in abdominal cases goes practically no lower than the blood pressure during inhalation anesthesia. One would be surprised if an accurate record of the blood pressure were kept, when the patient has inhalation anesthesia in heavy operations, how much the blood pressure drops during that part of the operation that is particularly heavy.

Blalock has shown in his experimental work on shock that there is a vast difference in the drop in blood pressure with spinal anesthesia, which is due, after all, to vasodilatation, with no loss of fluids from the tissues, and the drop in blood pressure that occurs with trauma and hemorrhage when there is a vasoconstriction. If a blood pressure drops severely with vasoconstriction it is much more significant and much more dangerous than a blood pressure drop when it is merely due to a vasodilatation, and that is all that it is in spinal anesthesia. The blood pressure, then, will adjust itself very promptly. The danger, we think, in spinal anesthesia is in one giving an overdose of the agent that produces the anesthesia to where the anesthesia will be so extensive that respiration is liable to be interfered with. If one is careful and will not give an overdose he will be able to control that particular phase of it and will not get into trouble with paralysis of respiration.

We are using spinal anesthesia more and more in abdominal emergencies, unless the patient has had a very marked hemorrhage or some condition in

which we are not able to get the patient's blood pressure up to a normal level where it can be maintained.

The point I want to make is that the drop in blood pressure in spinal anesthesia is not the most dangerous part associated with it. The danger is in giving an overdose and not being able to control the extent of the anesthesia.

In these emergencies we find that we can use spinal and in many cases there are certain complications in which inhalation anesthesia may produce changes and not be best for that particular case. However, if the patient is in severe shock and you cannot maintain the blood pressure to a reasonable level, perhaps it is best to use inhalation anesthesia.

Just a word about the use of local anesthesia in fracture cases, which I believe Doctor Ausherman mentioned. We have found local anesthesia in fractures of the upper extremity and fractures around the ankle to be a most valuable form of anesthesia. It is very much less of a burden on the patient and the fractures can be reduced in the office, and it simplifies matters a great deal.

The question, then, of selecting anesthesia in emergencies is a most important one and should be given most careful study and consideration. I want to congratulate Doctor Ausherman for bringing such a complete discussion of the subject before us.

DR. E. G. WOOD (Knoxville): The field of anesthesia has become so broadened with the advent of the newer anesthetics that it is almost impossible to evaluate these properly from the viewpoint of a surgeon.

No anesthetic should be routine for any service or any operation. The word "routine" to me immediately connotes lack of experience and training in other methods or failure to exercise care and judgment.

I have been asked to discuss Doctor Ausherman's paper on choice of anesthetic in acute surgical emergencies. I think he has given us a very practical and comprehensive paper.

In discussing preoperative medication, Gудels shows its effects on reflex irritability and metabolism. It is generally recognized that any change in normal metabolism is reflected in proportional degrees in reflex irritability present. The reduction of metabolism requires knowledge of the drug used in regard to potency, time of onset, and duration of effects. Many conditions influence metabolism: age, pain, emotional state, and toxemia, pain and emotional state being two factors in emergency surgery. One of the outstanding properties of morphine sulphate is its depressant effects on metabolism. When given intravenously the effect takes place in a much shorter time, of course, and therefore is a splendid preoperative medication, but at times the anesthesia has to be carried to a toxic level to obtain the desired relaxation and respiration is so shallow if the anesthetist is not

accustomed to working with a fast-acting preoperative medication, he may have considerable difficulty in not allowing anoxemia to become present and the patient to sink to a danger zone. With a gas machine, where carbon dioxide and oxygen may be given, this can more easily be controlled. Metrazol is of very great benefit when given early in these cases. Cyclopropane comes very nearly being the perfect anesthetic. Since 1933-34, when we first began to hear about cyclopropane and its uses, everyone who has worked with it, given by a skilled anesthetist, finds it very satisfactory, and may be used for almost all cases, its greatest disadvantage being its explosibility. Of course, ether by the open-drop method will always have a place in the field of anesthesia. It is satisfactory and not too unpleasant to take when given skillfully; and in emergency surgery, when a "full stomach" is usually the case, is one of the safest anesthetics we have.

Pentothal sodium is one of the lighter barbiturates, is katabolized with marked rapidity, and apparently leaves no ill effects. The method of administration is based on the individual's reaction, as in inhalation anesthesia. I believe, with the use of oxygen, a good color is maintained and relaxation equals that of spinal anesthesia, and like spinal, I believe its success depends greatly on its perfected technique of administration. For work about the head and face and traumatic chest surgery, it would seem especially suited. Despite the fact that early clinical reports warned against the use of pentathol sodium in patients having low blood pressure, anemia, circulatory disease, hepatic or renal diseases, organic or obstructive respiratory diseases, diabetes or hypertension, and in both extremes of life, I believe clinical experience and careful administration have proved it a safe and pleasant anesthetic.

I use mostly inhalation anesthesia and have had little experience with this anesthetic.

Vinethene (divinyl ether) is, I believe, a satisfactory anesthetic for ambulatory patients. Its potency is about four times that of ether. Relaxation is easily obtained. Recovery is rapid, with no untoward effects. I think it is a good office anesthetic, and I predict it will be more widely used when the general surgeons have a fundamental knowledge of its use, and Doctor Ausherman has given us a very comprehensive picture of its technique in this paper.

No matter how ideal an anesthetic may be presented to the profession, it is scarcely possible that the need for careful administration and intelligent control of the administration of anesthetic drugs producing pain relief will ever be eliminated. The technique by which drugs are administered will always remain the important factor in determining success or failure in results.

DR. DUANE M. CARR (Memphis): I would like to ask two questions. One is, why the atropine? Morphine and atropine are associated as ham and eggs. I realize that atropine decreases the amount



of mouth secretion to be contended with in the course of giving an anesthetic which is not a great drawback in the modern operating room with suction supplied. It has many side effects, one of which, of course, is the abolition of parasympathetic control of the heartbeat, another is the vasodilation that we find in the skin, but the one with which I am most concerned is the drying effect of the secretions in the bronchi themselves, making the mucus so sticky at times that it can scarcely be removed from the walls of the bronchi with suction and a bronchoscope. In the opinion of a large group, including those at the University of Michigan, and now including the group at the University of Tennessee, atropine has been a definite factor in the causation of massive collapse after operation. I would like to have an expression of opinion as to whether or not atropine is necessary.

The other question I would like to ask is this. Do you gentlemen who use cyclopropane, and give it well, find that there is an increase in the tendency of wounds to bleed and ooze under cyclopropane anesthesia? I use it extensively myself and have found it to be true, but it may be that it is the method of administration and not the drug itself which causes this effect.

DR. H. M. AUSERMAN (closing): As to the explosibility of cyclopropane, I want to put in a word for cyclopropane. There was a report just a few weeks ago in the JOURNAL on the relative explosibility of gases in using the closed system, and the conclusion of the report was (and this was made by a branch of the American Medical Association) that the explosibility of nitrous oxide-oxygen-ether mixture, ethylene-oxygen and cyclopropane-oxygen was equal. In other words, we use nitrous oxide-oxygen-ether in the closed system and the explosibility of the mixture is approximately the same as ethylene-oxygen mixtures or cyclopropane-oxygen mixtures. If ordinary precautions are taken, keeping the humidity of the operating room at fifty-five per cent or greater, and eliminating points of spark, such as from a diathermy or short

wave machine, keeping the cautery well away from the face mask, keeping an airtight system, the chances of explosion are rather remote. There never has been an anesthetic explosion south of the Ohio River. That is probably due more to the humidity than anything else. There was an explosion in New Orleans some years ago, but it was not an anesthetic explosion; it was an oxygen explosion. There have been some ether fires, but there never has been a gas explosion south of the Ohio River.

To answer Doctor Carr's question about atropine, if the anesthetist knew that he was going to use cyclopropane all the way through he would be able to get by without the use of atropine, but since there are some few patients who cannot take cyclopropane or ethylene, nitrous oxide or any other drug, they may have an individual sensitivity to it, and since we always fall back on ether when we get in trouble with any anesthetic, if we should have to use ether, then we certainly would need atropine. The reason for that is that ether is markedly irritating to the respiratory tract, and it causes an increased production of mucus and it is very difficult to keep the patient from aspirating this fluid. I think that the side effects of atropine given in proper dosage are less evil than the elimination of atropine altogether.

As for the oozing produced by cyclopropane, I do not know anything about it except what has been reported in the literature, and that is that the actual bleeding time and the actual clotting time taken during cyclopropane anesthesia was found not to be increased over that of normal.

This report which I read said that the bleeding was more apparent than real because of the high oxygen content of the blood, the blood appears much redder and will redden a sponge much easier. The choice of anesthesia in major surgical procedures is a broad subject and it is an individual problem.

I want to thank Doctor Carr, Doctor Edwards, and Doctor Wood for their discussion.

## THE DIAGNOSIS AND MANAGEMENT OF THYROID DISEASE\*

HARWELL WILSON, M.D., F.A.C.S.,† Memphis

The diagnosis and management of thyroid disease is especially interesting for several reasons. It presents a serious problem which may cause all degrees of incapacitation to the patient, and yet with proper care the patient may almost always be cured.

I should like to consider thyroid disease under two separate divisions, namely:

1. Simply goiter.
2. Hyperthyroidism.

For purposes of definition we shall consider as goiter any enlargement of the thyroid gland and hyperthyroidism any evidence of primary overactivity of the secretion of the thyroid.

One of the most frequently seen examples of simple goiter is the enlargement of the thyroid gland which occurs physiologically so often in adolescent girls. There is a symmetrical enlargement of the gland which practically never causes any subjective symptoms. Time usually corrects the condition, and about the only important thing to remember about this condition is that it is a mistake to operate in these cases where spontaneous regression is the rule. In exceptional cases where the gland does not seem to be receding very small doses of iodine given over a period of several weeks may be helpful. The indiscriminate use of iodine over long periods of time, however, is not to be recommended.

The simple goiter which is a surgical problem usually comes on slowly. In the beginning it is difficult to distinguish from a normal gland. Gradually, however, as enlargement progresses definite nodules or lobulations become palpable which make the diagnosis definite. There are no constitutional symptoms, and it is remarkable how large these goiters may be sometimes before producing symptoms of pressure.

The patient, however, presents himself to the doctor, as a rule, because of (1) the

cosmetic effect or (2) because of the pressure symptoms.

Pressure may cause an interference with breathing and swallowing, and at times voice disturbances due to stretching or pressure on the recurrent laryngeal nerves. In cases where the goiter is not prominent externally the patient may misinterpret such symptoms. Recently I operated upon a patient who, when first seen, believed she had heart trouble because of the difficulty experienced in getting her breath which made it necessary often to change her position and to use the accessory muscles of respiration. In addition she had noticed that her voice had been harsh for three months and a brassy cough had developed. Physical examination revealed a moderate enlargement of the thyroid extending below the sternum and displacing the trachea to the right.

Examination of the vocal cords showed them to be normal, showing that the recurrent laryngeal nerves had not been permanently impaired. In all cases of thyroid disease inspection of the cords is valuable since if one cord should be paralyzed it is certainly well to know it before operation. This can be done by almost anyone with a head mirror and a laryngeal mirror. Should the gag reflex make the examination difficult, a little pontocaine sprayed on the posterior pharyngeal wall will obviate the difficulty.

Simple goiters should be removed for cosmetic reasons or to prevent or relieve pressure symptoms which are always likely to occur. Naturally there is less risk if these simple goiters are removed early; however, the large ones do not offer much technical difficulty in most instances.

Simple goiter—especially if nodular—should be subjected to operation for a third reason; namely, because it has been shown that about ninety per cent of the carcinomas of the thyroid develop in previously asymptomatic simple nodular goiters. Lahey has led a crusade for the removal of nontoxic

\*Read before the Dyer, Lake, and Crockett Counties Medical Society at Reelfoot Lake, June 5, 1940.

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nodular goiters as the best way of preventing cancer of the thyroid.

Wide removal when seen quite early may give a cure in cases of carcinoma of the thyroid; however, most cases which can definitely be diagnosed as carcinoma of the thyroid have reached the inoperable stage due to fixation or a spread of the malignant cells beyond the capsule of the gland.

#### HYPERTHYROIDISM

An overactivity of the thyroid may develop in a previously quiescent adenoma of the gland or it may be due to a diffuse change in the entire gland, a condition spoken of as parenchymatous hyperplasia.

Hyperthyroidism, in my opinion, is a good term to cover all conditions with a hyperactive gland and may be considered to include conditions variously referred to as exophthalmic goiter, toxic adenoma, Graves disease, thyrotoxicosis, etc.

True hyperthyroidism may be one of the easiest diseases to diagnose when the findings are typical; however its recognition can be a real problem provided one or more of the characteristic findings are absent.

The symptoms may be divided into three groups:

1. Neuromuscular.
2. Cardiovascular.
3. Gastrointestinal.

The increased nervousness, emotional instability, and the fine tremor of the hands are features always sought for. The large number of eye signs, including protrusion of the eyes, widening of the palpebral fissures, and the absence of a wrinkled forehead on looking up, are very helpful when present, but may all be lacking.

Increased fatigue after slight exertion is often an important symptom in some cases which may be difficult to diagnose.

Tachycardia is the first noted and most commonly observed cardiovascular symptom. In hyperthyroidism the heart is overworked twenty-four hours a day. The increased rate if persistent will lead to dilatation and hypertrophy of the heart. Auricular fibrillation is a not uncommon complication in severe cases before and after operation.

Increased appetite occurring simultane-

ously with a progressive loss of weight is the most common gastrointestinal symptom. It has been likened to pouring coal on a furnace with the bellows fanning the fire at double speed. Intermittent diarrhea occurs in severe cases and adds to the debility of the patient by lowering the blood proteins and causing dehydration.

Occasionally the gastrointestinal symptoms will bring the patient to the doctor. In the past six months on our teaching service at the University of Tennessee we have seen two patients entering the hospital because of abdominal pain which they interpreted as possible appendicitis. A careful history and physical examination revealed the atypical findings and gradually the true diagnosis became apparent.

About fifteen per cent of cases of severe hyperthyroidism will have unprovoked attacks of vomiting.

In the great majority of cases of hyperthyroidism there is a definite enlargement of the gland; however, cases of severe hyperthyroidism do occur in hyperplastic glands where the gland is not grossly enlarged.

The basal metabolic rate also is of great help in confirming the diagnosis, but should never be used alone, as the history and physical findings are more important.

In the differential diagnosis incipient tuberculosis occasionally is confused with mild hyperthyroidism. Tachycardia fatigue and nervousness may occur in both diseases. When the diagnosis is not at first apparent a few days' study with the patient in bed will usually allow a clinical differentiation and confirmatory evidence is obtained from the temperature chart, chest film, and basal metabolic rate.

Neurasthenia and cardiac arrhythmias also occasionally cause confusion.

The proper preoperative preparation of these patients is just as important in lowering the mortality from the disease as is a skillful technique at time of the operation.

Sedation, absolute bed rest, high caloric diet, and iodination are the essential features. Lugol's solution by mouth is the form of iodine most often used; however, an occasional patient unable to take Lugol's

solution can take sodium iodide with little difficulty. Now and then a patient who can tolerate neither one of these may take an organic iodine preparation with good results.

The criteria determining when to operate are best judged on clinical findings rather than on any one laboratory test. In general, when the patient is gaining weight, becoming less nervous, showing a lower pulse rate and basal metabolic rate is the time to choose. In other words, while the patient is getting better rather than worse. Practically this usually means around ten days after the beginning of management; however, in severe cases much longer periods of preparation may be necessary. With our present methods of preparation most patients may be safely subjected to the subtotal thyroidectomy in one stage. In very severe cases where the condition of the patient does not improve adequately a two-stage operation is usually safer, one lobe being removed and then the second lobe removed from two to six weeks later.

#### SPECIAL TYPES OF CASES PRESENTING DIFFICULTY IN HYPERTHYROIDISM

In this group requiring special consideration I should like to briefly consider:

1. Hyperthyroidism in the patient with another coexisting indication for operative surgery. In a patient with hyperthyroidism and some other lesion demanding surgery, the thyroid operation should almost always be done first because an elective operation in some other part of the body may cause a thyroid crisis. I remember seeing a child with hyperthyroidism and extremely large tonsils. A tonsillectomy was done before the thyroidectomy and for a time after the tonsillectomy it seemed as if the child might not survive the thyroid storm. On the other hand, after thyroidectomy the patients tend to improve rapidly

and an operation on another portion of the body may usually be carried out relatively soon without much added risk.

2. Hyperthyroidism being discovered in pregnancy offers a special problem. I have had opportunity to follow a number of these cases picked up in a university lying-in service. I believe if discovered during the first half of the pregnancy it is best to operate on these patients and have done so in two instances without any difficulty, using local anesthesia. A number of such cases successfully managed have been reported from the Boston hospitals. Where hyperthyroidism is discovered in the third trimester, I believe it safest to treat the patient by rest in bed and iodination, seeking to carry the patient through delivery before operation.

3. The very young and the very old patients also present difficulties because they often have such severe reactions. In questionable cases very careful preparation and stage operations would seem to be the method of choice in handling such cases.

#### SUMMARY

1. Simple goiter of the adolescent variety is best left alone, as cure usually occurs spontaneously.

2. Simple goiter occurring after adolescence should be treated surgically for cosmetic reasons to prevent or relieve pressure symptoms, and if nodules are present to aid against the possibility of malignancy developing in the gland.

3. Hyperthyroidism is best diagnosed by a careful clinical consideration of history and physical examination with the metabolic test used for confirmatory evidence.

4. In patients with hyperthyroidism and some other coexistent disease demanding surgery, the thyroid, as a rule, should be attacked first.



# THE EAST TENNESSEE MEDICAL ASSOCIATION

W. T. MATHES, M.D., Greeneville

Presidential Address Before the East Tennessee Medical Association

*Mr. Chairman, Members of the East Tennessee Medical Association, and Guests:*

I am happy to come before you on this occasion and more so since we have this splendid attendance. Some of you were present one year ago next month at Greeneville when our attendance registered thirty-nine.

I hardly know why you should have chosen one so unworthy to be president of our grand old East Tennessee Medical Association except for the fact that there were so few in attendance and your nominating committee was in a humorous mood, deciding that the organization was badly sick. So, in looking over the little crowd, they thought the appropriate thing to do was to elect a sick man as president of a sick and dying organization. I am here to tell you that I really was a sick man, too sick to have been at the meeting, and too sick to accept or reject the nomination.

At first I became amused and wondered whom the joke was on, the East Tennessee Medical Association or myself. After I had sufficiently recuperated, I began to think seriously about the matter and decided I would look into the history, make an examination, diagnose and make a prognosis of the case. The next big problem was to decide if I were a good enough doctor to prescribe a cure. After much deliberation and repeated consultations with many of my friends, it was concluded that intensive treatment was indicated and a fatal prognosis was not justified. Without exception, the consultants were vitally interested in the patient's recovery and you are observing the success of the treatment at this meeting.

## CASE HISTORY

As far as we know or can find of the history of East Tennessee physicians, Dr. Patrick Vance was the first to locate in what is now East Tennessee, probably in 1776 or 1777. One of his sons located at Greeneville and his two sons, J. A. and W. N. Vance, became physicians.

The second physician of whom any record

is found was Dr. James Cosby of upper East Tennessee, but his first home of record was in Knox County, just east of Knoxville.

When the Tennessee State Medical Society was organized in 1830, the names of forty-five physicians of East Tennessee were upon its list of charter members. At the organization meeting in Nashville, four of these, James King of Knoxville, Alexander F. McKinney of Greene County, Samuel Pride and John Temple of Blount County, were in attendance.

The attendance of the meetings, then held in Nashville and Murfreesboro, was very poor from the eastern section because of slowness and difficulty of travel. In 1835 the state society approved the idea of the establishment of auxiliary societies, one in East Tennessee and one in West Tennessee, but nothing further seems to have been done about the matter.

In East Tennessee, as elsewhere in many parts of the United States, there were men engaged in the practice of medicine whose qualifications were exceedingly poor. It was for the purpose of seeking to remedy this situation, further the increasing of medical knowledge, and promote peace and harmony within the profession that a convention of physicians was called to meet in Knoxville on May 7, 1845. On the appointed day twelve men from six counties of East Tennessee met and organized the Medical Society of East Tennessee. Its constitution and by-laws were drafted by Drs. Samuel B. Cunningham of Washington County and J. G. M. Ramsey of Knox County. Its first officers were: Dr. Samuel B. Cunningham, president; Dr. Samuel B. Bowles and Dr. F. N. Compton, vice-presidents; Dr. Frank A. Ramsey, corresponding secretary; Dr. James Rodgers, recording secretary; and Dr. William Rodgers, treasurer. The first meeting was to be held at Jonesboro the following October.

In determining what should be the qualifications required of its members, the Medical Society of East Tennessee had some difficulty. It desired to protect the public

against incompetent practitioners by guaranteeing, among other things, that its members were properly qualified. It did not feel, however, that the selection of its members on the basis of the possession of a diploma would be satisfactory. In the words of the society's corresponding secretary, Dr. Frank A. Ramsey: "Many reputable and energetic practitioners of medicine had never graduated—if, indeed, they had ever attended one course of lectures, but (they), nevertheless, manifested their sympathy in the progressive spirit of the age by anxiously endeavoring to keep themselves familiar with the opinions of those worthy of respect, the discoveries of the times and their applications, and with the observations presented through the periodicals of the profession." On the other hand, there were physicians with diplomas who had rested on their labors and had failed to keep up with the advances made by the profession. Furthermore, there were young men without diplomas who were seeking to begin the practice of medicine. The state required no license of them, but the society thought that it might protect the public by issuing a certificate to those who would evidence their competency by passing an examination.

For a few years the Medical Society of East Tennessee thrived. Its membership increased to something more than seventy. It held semiannual meetings. With some modifications, it had adopted at its organization meeting the "Synopsis of Medical Etiquette," which had been presented to the Natchez Medical Society in 1842. The newly-framed code of ethics of the American Medical Association was adopted at its fall session in 1847. The society requested the newspapers to print this code in the hope that public knowledge of it might promote its observance by physicians and advance "the morals of the profession." To conform further with its policy of "affecting practitioners by enlarging the public comprehension in relation to medicine," the society included in its program at each meeting a popular address which was frequently distributed in pamphlet form.

The meetings of the society served as a

stimulus to its members, whose writings appeared in several of the medical journals. An attempt was made to gather material for a history of surgery in East Tennessee. A census of the physicians of that section was partially completed. The cooperation of the Medical Society of Tennessee in petitioning the state legislature for a law which provided for the registration of births, marriages, and deaths was sought. The *Nashville Journal of Medicine and Surgery* was made the official organ of the society in 1851 and in 1852 the *East Tennessee Record of Medicine and Surgery* was edited under its auspices by Dr. Frank A. Ramsey. However, the society and its periodical soon died.

Under the leadership of Dr. Frank A. Ramsey and Dr. Richard O. Currey, a successful attempt was made to reestablish an organization of East Tennessee physicians in 1855. The East Tennessee Medical Society was organized on October 31 in the basement of the First Presbyterian Church in Knoxville. The code of the American Medical Association and the constitution and by-laws of the "former" Medical Society of East Tennessee were adopted. The *Southern Journal of the Medical and Physical Sciences*, published in Knoxville, was designated as the official organ of the society. The officers elected were: John J. Moorman of Knoxville, president; R. H. Hodsden and Samuel Pride, vice-presidents; O. F. Hill of Knoxville, recording secretary; Frank A. Ramsey of Knoxville, corresponding secretary; and John L. Atlee of Athens, treasurer. Dr. Samuel Pride of Maryville was elected president in 1856; Dr. R. H. Hodsden of Sevierville in 1857; and in 1858, Dr. O. F. Hill of Knoxville.

The Knoxville Medical Society was chartered by the state legislature in 1856 and received all of the powers that had been granted to the Medical Department of the University of Nashville. Among these powers was that of conferring degrees. Two years later the act was amended by substituting the East Tennessee Medical Society for the Knoxville Medical Society. Whether this society ever granted degrees or not is problematical. It continued other-



wise in active operation until the Civil War put an end, temporarily, to its work.

The East Tennessee Medical Society resolved, at the meeting in October, 1855, that auxiliary county societies should be organized. The Medical Society of Monroe County seems to have been a result of this resolution.

The East Tennessee Medical Society reorganized early in 1871, and in October of that year Dr. Frank A. Ramsey was chosen president; Dr. Swan M. Burnett, recording secretary; Dr. Chalmers Deadrick, corresponding secretary; and Dr. John M. Kennedy, treasurer. Dr. A. B. Tadlock, as president of the Knox County Medical Society, was ex-officio vice-president of the East Tennessee organization.

After more than half a century of activity, it was found that all parts of East Tennessee were not represented at the annual meetings as fully as they should be. About 1910 a lower East Tennessee Society was organized with a considerable membership. Railroads, the recent advent of automobiles and good roads, and the increase in progressive and growing communities in this territory called for expansion and greater activity of the society. Thus the two societies in 1911 were combined into the East Tennessee Medical Association with a total membership of more than 150. This expansion was brought about largely through the efforts of Drs. L. L. Sheddan, Oliver Hill, Jesse Hill, and perhaps others. From 1911 up to and including May, 1930, a spring meeting was held in upper East Tennessee and a fall meeting the first Tuesday in October in lower East Tennessee. Since Middle and West Tennessee held only annual meetings and Knox County Medical Society was holding an all-day meeting early in the spring, inviting members of East Tennessee Association, it was decided to have the one meeting yearly, the first Tuesday in October. This year, however, we found the Tennessee Valley Postgraduate Assembly meeting set for October 10 and 11, and since this meeting is sponsored by the Knox County Medical Society, or at least, some of our Knoxville friends are trustees of the Tennessee Valley Postgraduate Assembly and go to considerable ex-

pense each year to give us this wonderful meeting, we did not feel disposed to spoil their meeting by having this one set so close. Hence, this date instead of October 1.

#### DIAGNOSIS

The attendance and interest in the East Tennessee Medical Association has decreased, due to no particular fault of anyone. However, all of us are to blame to some extent. We seem to expect our secretary to know the kind of program which would appeal to us without giving him any suggestion as to topics to be discussed or members who would discuss them.

Some, I am afraid, have been somewhat politically-minded instead of helping to keep the home fires burning, have seen greener pastures farther away, and, momentarily, lost the home spirit and interest. As always, too many of our good East Tennessee doctors need to be filled with the spirit of organized medicine, then they will not use the alibi of "too busy to attend the meeting." For we have no other medical organization which has meant or can mean as much to the doctors of East Tennessee as this organization.

#### PROGNOSIS

I have found that prevailing sentiment favors the increasing of our efforts to make this organization a bigger and better society rather than to let it die. Every man called upon has enthusiastically responded 100 per cent in an effort to create interest and make this meeting a success. It has evidently been contagious, for all along we have had volunteers, and so I predict that each succeeding meeting will be a greater success because of this abundant supply of talent, enthusiasm, and a willingness to work.

#### TREATMENT

This is always an extremely important phase of every case and the following recommendations, arrived at during various consultations, should receive serious consideration from each of you if we are to make this organization mean what it should in the future.

It was learned that many of the men in the more distant counties have not attended the one-day meetings because of the dis-

tance, but many have expressed a feeling that they would be more than justified in making the trip for a two-day meeting. They also feel that a two-day meeting will afford better opportunities for contact with their medical colleagues.

The consensus of opinion also indicates that at least two guest speakers should be provided for each meeting.

It is also felt that inadequate hotel accommodations and meeting facilities can have a definitely injurious effect upon the meeting and that, for this reason, particular attention should be given to the selection of the meeting places. A particular county society might well make excellent hosts for one of our meetings and still the success of the meeting be curtailed because of the small size of the town, making adequate facilities impossible.

It will be necessary to give some thought to better financing within our organization. The decreasing attendance of the past two years has resulted in a deficit of \$134.46. In spite of this fact, there has been no complaint from our secretary. This deficit has been underwritten by a small group of members who are vitally interested in the continued success of the association. Future two-day meetings, with a minimum of two

guest speakers, make it advisable to consider an increase in our dues.

The treatment of this patient can, therefore, be summed up by the following recommendations for the good of the association:

1. That future meetings be of two days' duration rather than one.
2. That a minimum of two guest speakers be secured for each meeting.
3. That particular attention be given to the availability of adequate hotel and meeting facilities in the choice of a meeting place.
4. That the auditing committee consider the advisability of increasing the dues and submit a recommendation for same.

It is impossible for the secretary to prepare a program without the cooperation of the members. Every member should consider it his duty and privilege to offer to the secretary suggestions as to topics and members to appear on the program.

I would like to take this opportunity to express my appreciation to the friends who contributed in making this meeting such a success and more particularly to our hosts of La Follette and the Campbell County Medical Society.



## MANAGEMENT OF REACTIONS TO THE ARSENICALS

CLARENCE SHAW, M.D., Chattanooga

All antisyphilitic drugs are capable of producing a wide variety of toxic reactions, which from the medical and economic standpoint are important considerations. Although no attempt will be made to give an exhaustive survey of the literature, practical plans for the handling of the more common reactions to the arsenicals will be presented. It will be assumed that the physician treating syphilis is thoroughly familiar with approved technics for administering the various drugs and with the standard schemes of treatment as suggested by the cooperative clinics. This implies a working knowledge of the various prophylactic measures commonly employed for the prevention of treatment reactions, including correct drugs, proper dosage, sterile equipment, good needles and syringes, distilled water, slow administration of all arsenicals (except mapharsen), and familiarity with the anatomical landmarks used in administering treatments.<sup>1, 2</sup>

The treatment of arsphenamine dermatitis depends upon the type of eruption. The fixed type of arsphenamine dermatitis is ordinarily not a contraindication for the continuation of the arsenical unless it appears too conspicuously on the face or unless it shows a tendency to spread with each successive dose of the drug. Transient urticarias are usually comparatively benign. If they persist, substitution of another drug should be tried. The generalized pruritic erythema which goes on to develop into an exfoliative dermatitis is a much more severe complication and deserves the utmost in careful attention. At the first sign of pruritus, erythema, or vesiculation, all arsenicals should be stopped at once and the patient observed closely. If the eruption and itching persist or become more prominent, soothing lotions such as calamine lotion containing one per cent phenol may be applied locally and colloidal baths permitted. For years sodium thiosulphate has been recommended as a specific form of treatment, but recently glucose intravenously has been accepted as a superior type

of therapy. The former is given to best advantage during the first two or three days of the dermatitis, ten to twenty cubic centimeters of a ten per cent solution I. V. to the dose. Ordinarily twenty to fifty cubic centimeters of a fifty per cent solution of glucose are given daily as long as the eruption is active.<sup>3</sup> Liver extract intramuscularly<sup>4</sup> and calcium salts intravenously may also be employed to advantage. One of the most valuable adjuncts to therapy is the administration of small doses of X-ray to the involved areas (thirty-eight to fifty r once or twice weekly). Arsphenamine sensitivity has been linked with vitamin C. However, recent work indicates that a low plasma vitamin C content is apparently a result of the toxic reactions rather than a predisposing factor to such reactions.<sup>5</sup> Severe cases should be hospitalized with careful attention paid to the urine and blood count. An ointment containing three per cent ichthyol will stimulate healing of the exfoliated skin areas. Three months after the eruption has completely cleared, the patient may be patch tested with the various arsenicals. If the patch tests are negative, intravenous testing is in order, further therapy with arsenicals depending upon the results of these tests. Frequently mapharsen will prove to be the one drug which may be used.<sup>6</sup> Removal of foci of infection will sometimes permit further use of an arsenical which formerly produced reactions.<sup>7</sup> The patient with early syphilis should be given heavy metal therapy while being treated for the arsphenamine dermatitis.

Arsphenamine jaundice is also a serious complication. Here, too, treatment with arsenicals should be stopped at the first sign of jaundice. A blood icterus index is of great value in questionable cases and serves as a base line for further observations. The patient is placed on a low fat, high carbohydrate diet, and sodium thiosulphate or preferably glucose should be given as for arsphenamine dermatitis. Liver extract<sup>4</sup> and calcium gluconate are also of value.

Duodenal lavage with 100 cubic centimeters of saturated solution of magnesium sulphate will give great symptomatic relief.<sup>1</sup> An occasional mild course of calomel and sodium phosphate may be helpful. An attempt to resume arsenical therapy may be made about two months after the signs and symptoms have disappeared and the icterus index has returned to normal. Mapharsen can frequently be tolerated in these patients, but the first few doses should be small (.005 to .01 grams).<sup>6</sup> During the time when arsenicals are not being given heavy metals can usually be used with safety.

Arsphenamine blood dyscrasias, although rare, are dangerous complications. When purpura hemorrhagica develops,<sup>8</sup> all arsenicals should be stopped at once and a blood count performed. Small frequent blood transfusions, snake venom, vitamins C and K are all of value in the more severe cases. Mapharsen, beginning with small doses, can frequently be used with safety following purpura due to one of the other arsenicals. Agranulocytosis may be treated with pent-nucleotides and blood transfusions.

Another rare complication is hemorrhagic encephalitis.<sup>9</sup> This condition warrants immediate hospitalization for decompression and precludes the use of any further arsenical at any time. There is no specific treatment for this frequently fatal reaction.

Nausea and vomiting may occur immediately after treatment or several hours later. The former type is usually due to faulty technic, incorrect eating habits on the part of the patient or fear of the injection. Persistent nausea and vomiting can be controlled by attention to these details and the administration of .5 to one cubic centimeter of adrenalin subcutaneously. The delayed form of gastrointestinal reaction can be avoided by dissolving the neo-arsphenamine in a five per cent solution of sodium dehydrocholate (five cubic centimeters for each .15 grams).<sup>10</sup> Nausea and vomiting with flushing of the face sometimes occur following the use of trypanarsamide. It has been my experience that this drug will continue to produce this reaction even after a long rest period or with reduced dosage.

Nitratoid crisis must be differentiated from arsphenamine shock. The former reaction, which comes on during or shortly after treatment, is characterized by apprehension, flushing of the face, nausea, and vomiting followed by pallor and perspiration. Arsphenamine shock occurs ten to twenty minutes after the injection and is like any other form of shock wherein the patient becomes pale with a cold, clammy skin, a slow pulse, and fall in blood pressure. The nitratoid crisis is a much less serious reaction than true shock. It is treated by injecting five to ten minims of adrenalin and rest on the treatment table. One/one hundred fifty atropin or five minims of adrenalin injected several minutes before the treatment will usually prevent a reaction. The divided dose method may also be tried wherein the patient is given one-tenth of the dose and thirty to sixty minutes later the remaining nine-tenths. Arsphenamine shock should be treated like surgical shock with lowering of the head, heat, fluids, adrenalin, and possibly adrenal cortex. It is an absolute contraindication to further arsenical therapy.

Extravasation of an arsenical is promptly manifest to the patient by a sharp burning pain at the site of injection. Such pain or visible swelling should warn the physician to stop the treatment by withdrawing the needle. The injection of a local anesthetic into the area infiltrated will give temporary relief and serve to dilute the noxious drug. Hot or cold applications may be used as after treatment. In the event of a slough, ultraviolet light and stimulating ointments will promote healing. Spasm of the vein occurring after mapharsen is promptly relieved by ice-cold compresses to the upper arm.

Argyria following silver arsphenamine can be best avoided by limiting the total dosage of that drug to about seven grams. Injecting a mixture of one per cent potassium ferricyanide with six per cent sodium thiosulphate intradermally with a local anesthetic is a tedious, but valuable method of treatment.<sup>11</sup>

The syphilitic patient who is sensitive to arsenic offers a serious problem in therapy.



In some instances it is possible to avoid further reactions by substituting one of the other preparations. Reduced dosage of the offending drug is ordinarily not wise since the small quantity is sufficient to mask the clinical picture without curing the disease, thus giving both the patient and clinician a false sense of security. If it is not possible to use another drug in full doses, it is far better to reconcile oneself to the situation and carry on treatment with longer courses of heavy metals. Consultation with a syphilologist may be very valuable in some of the more complicated problems in therapy due to sensitization.

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TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of  
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The one hundred eighth annual meeting of the Tennessee State Medical Association has just been concluded.

It is believed that all who attended got value received for the investment they made. They got scientific information in abundance.

Many capable critics have said that the scientific program this year was the best the State Society ever had. Every number except one was presented.

The commercial and scientific exhibits were exceptionally good.

There was value in the way of stimulation and inspiration. There were many delightful personal contacts which many will treasure always.

No one can miss the meetings without sustaining a definite loss.

### AN ACTION OF THE HOUSE OF DELEGATES

The House of Delegates took action on several matters of great importance, but no action was of more importance than that relating to the combination of small component units in such a way as to form larger units.

The effect of the resolution adopted by the House was to instruct the councilor of each district to hold conferences with the officers and members of component societies in his district with a view to bringing about such a combination of local societies as will create local component societies with a minimum membership of seventy-five.

Any number of capable leaders in the state have contended that our county system of political administration is wasteful and inefficient and that the state should be redistricted and a smaller number of counties created, but such action is defeated by the so-called "courthouse politicians." There is no reason, however, for this fact to prevent the medical profession from taking a forward step looking to the improvement of the efficiency of local component medical societies throughout the state.

A sufficient number of local units composed of from two to five counties are already in operation and have supplied the experience necessary to justify the conclusion that this is the solution of the problems of small component societies.

Counties were laid off and county sites designated years ago for very definite reasons. The county site was so located that a



person living on the outer border of the county could get up in the morning, do his chores, go to the county seat on horseback, or muleback, over a muddy road, transact some business and return home in time to do his evening chores before dark. If the same basic reasoning which determined the size of counties in those days were applied to county societies today, there certainly would not be more than twenty or twenty-five county societies. The number of members in each county would be increased. Scientific programs would be improved. Postgraduate activities would be multiplied and simplified. The efficiency of organized medicine throughout would be enhanced.

Modern roads and modern modes of transportation make it possible for a doctor to travel thirty or forty miles and attend a good society meeting with great ease and little loss of time.

It was intimated that if such steps are not taken in the year 1941 on a voluntary basis, some other action will be considered at the next session of the House with a view to accomplishing this much-needed reform on some other basis.

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The following letter was just received from a county secretary and is self-explanatory and to the point:

*Tennessee State Medical Association, Nashville, Tennessee.*

Gentlemen:

As you can tell by our report, the McNairy County Medical Society has been very inactive and practically all of the members want to join with another society, their choicé being the Madison County Society, as they always have good programs. The only time that our society

is active is during a postgraduate course and we would like to know if we could continue to have our work at Selmer even if we belonged to another society.

With best wishes and hoping to hear from you soon, I am

Yours truly,

(Signed) T. N. HUMPHREY.

*Secretary, McNairy County Medical Society.*

## DEATHS

DR. W. A. JACKSON

Dr. W. A. Jackson, Monteagle; College of Physicians and Surgeons of Baltimore, 1896; aged seventy-eight; died March 9, 1941.

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DR. R. B. MACON

Dr. R. B. Macon, Clarksville; Vanderbilt University, Medical School, Nashville, 1898; aged sixty-five; died March 15, 1941, following a heart attack.

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DR. THOMAS JENNINGS

Dr. Thomas Jennings, Clinton; University of Tennessee, Medical School, 1909; aged fifty-seven; died March 31, 1941, of injuries suffered in an automobile accident.

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DR. W. T. BRAUN

Dr. W. T. Braun, Memphis; Memphis Hospital Medical College, 1898; aged sixty-five; died March 7, 1941, following a heart attack.

## RESOLUTIONS

*To the House of Delegates of the Memphis and Shelby County Medical Society.*

Gentlemen:

We, the undersigned committee, directed by the president of this society, in accordance with a motion unanimously carried at our last meeting, to advise the Hon. Prentice L. Cooper, governor of this state, of our reaction, both personal and collective, to his recent veto of the Basic Science Bill, herewith submits its report.

We, the members of the Memphis and Shelby County Medical Society, who constitute about one-fifth of the members of the Tennessee State Medical Association, want the governor to be advised we very definitely do not approve his veto of the Basic Science Bill. This bill was passed by both houses of the state legislature after due and deliberate consideration. This is the same body which has passed appropriations for our State University Medical School, one of the best in America. Their object was to produce and develop qualified physicians. It is, therefore, supported largely by the taxpayers. The taxpayers of Tennessee are entitled to the highest type of medical service which can be obtained. His veto of this bill prevents them from having a better class of practitioners, of whatever branch of the healing art they prefer.

Much of the legislation sponsored by the medical profession has made a more difficult road for the medical profession to travel. Nevertheless, it has all been done in the interest of the public welfare. As long as the profession continues to progress, they will continue to advocate legislation which will elevate the standards

of those engaged in treating the sick. This is not the first defeat we have met, nor is it likely it will be the last we shall meet at the hands of politicians. We do not admit permanent defeat. We have had such battles for many years, yet in spite of that fact we have the highest quality of medical service and, consequently, the lowest mortality rate of any nation in the world.

The public will eventually demand higher medical standards than now prevail in Tennessee.

Respectfully submitted,

H. B. EVERETT,  
W. L. WILLIAMSON,  
*Committee.*

## NEWS NOTES AND COMMENTS

Rules governing the award of "The Foundation Prize" of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons:

1. "The award which shall be known as 'The Foundation Prize' shall consist of \$150.

2. "Eligible contestants shall include only (a) interns, residents, or graduate students in obstetrics, gynecology or abdominal surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching obstetrics, gynecology or abdominal surgery."

3. "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the secretary of the association, together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."



4. "Manuscripts must be limited to 5,000 words, and must be typewritten in double spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

5. "The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors."

6. "Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the secretary before June 1."

7. "The award will be made at the annual meetings of the association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation."

8. "The president of the association shall annually appoint a committee on award, which, under its own regulations, shall determine the successful contestant and shall inform the secretary of his name and address at least two weeks before the annual meeting."

JAS. R. BLOSS, M.D., *Secretary*.  
418 Eleventh St., Huntington, W. Va.

The Department of Medicine of the New York Postgraduate Medical School has issued a preliminary announcement of their five-day course in tropical medicine.

This is the first time such a course has been offered by their institution, and every effort will be made to insure that those enrolling receive full benefit.

The course is offered for a fee of fifty dollars and those interested should address applications to the Director, 309 East Twentieth Street, New York City.

## WOMAN'S AUXILIARY

President-----Mrs. W. T. Braun  
Memphis

President-elect-----Mrs. W. W. Potter  
Concord

Press and Publicity-----Mrs. H. B. Brackin  
Nashville

### KNOX MEDICAL AUXILIARY TO OBSERVE DOCTORS' DAY

Dr. W. S. Nash will speak at the meeting Wednesday at the home of Mrs. H. E. Christenberry.

Doctors' day will be observed by the Auxiliary to Knox County Medical Society at its meeting at 10:30 A.M. Wednesday with a program about the history of medicine in Knoxville. The meeting will be at the home of Dr. and Mrs. H. E. Christenberry, Highland Drive.

Dr. Walter S. Nash will speak of the Lincoln Memorial College of Medicine. The college building is now part of Knoxville General Hospital. Dr. Nash will be presented by Mrs. John Moore.

Dr. Benjamin B. Cates will be a guest of honor.

Mrs. J. F. Morrow will preside over the business session beginning at 10:30. Mrs. Benjamin B. Cates will give the report of the nominating committee.

Luncheon will be served by three committees headed by Mrs. W. W. Potter, Mrs. John Moore, and Mrs. Dewey Peters.

### MRS. MARY HALL IS SPEAKER AT AUXILIARY

Reviewing the thirty points in the children's charter dealing especially with the understanding of the individual child and the guarding of his personality, Miss Mary Hall spoke Friday afternoon before members of the Woman's Auxiliary to the Stones River Academy of Medicine at the home of Mrs. J. B. Black, with Mrs. W. V. Sanford assisting the hostess.

The discussion was enlivened by illustrations taken from the classroom and it was emphasized that, under proper guidance, personalities and apparently "hopeless" characteristics of children may be, to a great degree, remedied.

"We may expect the best of our democracy," Miss Hall said, "if we offer our children adequate medicinal, dental, nursing, safety, and public health facilities at school and at home, and exercise due care in their spiritual and moral training."

The speaker was introduced by Mrs. Black.

## MEDICAL SOCIETIES

### *Blount County:*

March 20: "Conditions Effecting Acute Abdomen," by Dr. C. C. Vinsant. Discussion opened by Dr. Lea Callaway.

March 27—"Recent Advances in Vitamin Therapy," by Dr. G. W. Burchfield. Discussion opened by Dr. C. B. LeQuire.

April 3—"Health and National Defense," by Dr. K. A. Bryant. Discussion opened by Dr. G. D. LeQuire.

April 10—"Injection Treatment for Low Back and Sciatic Pains," by Dr. Lowell Vinsant. Discussion opened by Dr. Murlin Nester.

Papers scheduled to be read:

April 17—"Injection Treatment of Hernia," by Dr. C. B. LeQuire. Discussion to be opened by Dr. G. W. Burchfield.

April 24—"Legal Medicine," by Mr. R. R. Kramer.

May 1—"Advances in Pharmacology," by Dr. J. M. Ousley. Discussion to be opened by Dr. C. C. Vinsant.

May 8—"Fifty Years of Obstetrical Practice," by Dr. C. F. Crowder.

May 15—"Outstanding Doctors in Tennessee," by Dr. Lea Callaway. Discussion to be opened by Dr. J. M. Waters.

### *Davidson County:*

March 11—"Substernal Pain with Special Reference to Noncardiac Disease," by Dr. Chester Jones, clinical professor of medicine, School of Medicine, Harvard University.

March 18—"Urinary Calculi: Diagnosis and Treatment," by Dr. J. C. Pennington. Discussion by Dr. C. F. Anderson.

April 1—"Subdiaphragmatic Abscess: Diagnosis," by Dr. T. F. Frist. Discussion by Dr. Rollin Daniels, Jr.

April 8—Meeting of Tennessee State Medical Association.

April 15—"Management of Syphilis in the Surgical and Obstetrical Patient," by Dr. Marion Davis. Discussion by Dr. R. H. Kampmeier.

March 25—A dinner was given in honor of Dr. Alfred Blalock, Dr. Tinsley Harrison, and Dr. Henry Meleney.

March 4—"Psychiatry in Selective Service," by Dr. J. P. Gilbert. Discussion by Dr. Frank Luton.



"Carcinoma of Oral Cavity: Diagnosis and Treatment," by Dr. C. M. Hamilton. Discussion by Dr. L. W. Edwards.

March 20—"DeLee's Obstetrical Moving Pictures," by Dr. E. F. Buchner, Jr.

"Recent Advances in Pediatrics," by Dr. W. E. Van Order.

March 27—"Physiology of Surgery of Inguinal Hernia," by D. David Karr.

"Meckel's Diverticulitis," by Dr. F. L. O'Connor.

April 3—"Hypertension and the Heart," by Dr. Philip H. Livingston.

April 10—Tennessee State Medical Meeting.

Papers scheduled to be read:

April 17—"Food Allergy," by Dr. T. C. Crowell.

"Asphyxia Neonatorum," by Dr. O. L. Von Canon.

April 24—"Cancer of the Rectum," by Dr. Gene Kistler.

May 1—"Intestinal Obstruction," by Dr. W. D. L. Record.

"Indications and Contraindications in Biliary Tract Surgery," by Dr. A. M. Patterson.

May 8—Meeting at Pine Breeze.

May 15—"Bitters Disease," by Dr. Harold Starr.

"Palliative Irradiation in Inoperable Carcinoma of the Breast," by Dr. Franklin B. Bogart.

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#### *Knox County:*

April 1—"Anorexia in Children," by Dr. Oliver Hill. Discussion by Drs. Joe T. Smith and Jack Chesney.

April 8—Meeting of the Tennessee State Medical Association.

April 15—Report of State Meeting.

Papers scheduled to be read:

April 22—"Hypo-ovarianism," by Dr. E. M. Edington. Discussion by Drs. John Hill and Phil Thomas. Movie on "Gonadotropic Hormone."

April 29—"Precancerous Conditions and Their Recognition," by Dr. J. B. Ely. Discussion by Drs. A. H. Lancaster and Dr. Herbert Acuff.

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#### *Madison County:*

The Madison County Medical Society met in regular session on April 1, 1941, at the New Southern Hotel in Jackson, at 6:30 o'clock.

Two papers were presented before the meeting. Dr. John C. Burch, "Cancer of Cervix," and Dr. Horton Casparis, "How to Keep 'Em from Going Crazy." Both papers were enjoyed very much.

There were thirty-five doctors present.

(Signed) S. M. HERRON, M.D.,

*Secretary.*

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#### *Washington, Carter, and Unicoi Counties:*

The regular monthly meeting of the Washington-Carter-Unicoi County Medical Society was held in the private dining room of the John Sevier Hotel, Johnson City, March 6, at 7:00 P.M.

Dr. W. G. Frost, Elizabethton, read a paper on the subject, "Sulfanilamide Therapy as an Aid to Surgery."

Dr. Harry Myron, Jr., read a paper on the subject, "Sulfanilamide with Special Reference to Treatment of Ear, Nose, and Throat Diseases."

The papers were discussed by Doctor Wofford, Johnson City; Doctor Lodge,

Mountain Home; and Doctor Baughman, Elizabethton.

The scientific program was preceded by a Dutch dinner.

Dr. A. B. Shipley of Elizabethton and Dr. H. B. Fuqua of Johnson City were elected delegates to the state convention.

Thirty members and guests were present.

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The regular monthly meeting of the Washington-Carter-Unicoi County Medical Society was held Thursday, April 3, at 7:30 P.M., in the club dining room of the John Sevier Hotel, Johnson City.

Dr. Chevalier L. Jackson of Philadelphia addressed the society on the subject, "The Contributions of Bronchoscopy to Clinical Medicine and Surgery."

One hundred twenty-five members and guests from East Tennessee, Western North Carolina, and Southwestern Virginia attended the meeting.

The address was preceded by a dinner in honor of Doctor Jackson.

Dr. Austin I. Dodson of Richmond, Virginia, will be the guest speaker at the May meeting of the society which will be held at Elizabethton, Tennessee.

(Signed) H. B. CUPP, M.D.,  
*Secretary.*

## OTHER MEDICAL SOCIETIES

The meeting of the American Association for the Study of Goiter will be held in the Hotel Statler, Boston, Massachusetts, May 12, 13, and 14, 1941.

The fiftieth session of the West Tennessee Medical and Surgical Association will meet at Dyersburg, Friday, May 16. Preparation is being made for an excellent program and entertainment features.

A cordial invitation is extended to all physicians and surgeons.

DR. GEORGE R. MCSWAIN,  
*Secretary.*

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The next meeting of the Middle Tennessee Medical Association will be held in Clarksville on Thursday, May 15.

DR. ROLLIN A. DANIEL, JR.  
*Secretary.*

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## ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, MARCH 7, 1941

1. Case Report: "An Unusual Case of Hypoglycemia Associated with Hypersensitive Carotid Sinus Syndrome," by Dr. John C. Ransmeier.

The patient, a fifty-four-year-old white farmer, gave a history of weak spells occurring about four hours after meals during the past year. For three months he had frequently been awakened by attacks of excitement and irrationality in the early morning hours. He would recover from these completely after breakfast. Seen at the hospital in such an attack, comatose, he had a blood sugar of thirty-two milligrams per cent. Intravenous glucose restored him at once to normal, but in four hours the blood sugar had again fallen to thirty-one milligrams per cent and another attack occurred. He was finally controlled on a high protein diet with frequent feedings. He was thought to have an adenoma of the pancreas with hyperinsulinism. Hyperactivity of the carotid sinus mechanism was also demonstrated.



This case was discussed by Drs. Hugh Morgan, Charles E. King, and W. E. Garrey.

2. "The Carotid Body and Its Relation to Vasomotor Regulations," by Dr. Theodore Bernthal.

Reflex alterations of vasomotor tone originate at carotid body chemoreceptors. Evidence presented indicates that hypoxemia, hypercapnia, NaCN and lactic acid, restricted to the carotid body, cause reflex vasodilatation.  $\text{NaHCO}_3$  and hypocapnia cause reflex vasodilatation.  $\text{Na}_2\text{CO}_3$  causes initial vasoconstriction followed by vasodilatation. Carotid body ischemia causes reflex vasoconstriction. Chemoreceptors react to alterations as small as ten minims of mercury in arterial  $\text{O}_2$  tension and fifteen minims in arterial  $\text{CO}_2$  tension. On the basis of evidence presented, it is tentatively concluded that activity of chemoreceptors is governed by changes in their own intracellular acidity and that they are tonically active.

This paper was discussed by Drs. Tinsley R. Harrison, W. E. Garrey, and Charles E. King.

3. "The Opsonocytophagic Response to Whooping Cough Vaccination," by Drs. J. C. Peterson and A. E. Keller.

The opsonocytophagic tests on 249 children following whooping cough vaccination show that most of them respond to produce serous antibodies, that after three months of age the final response is about the same for all age groups, and that those children less than three months respond, but not as well as older children. Following primary vaccination a single injection results in a response comparable with the response of primary vaccination.

This paper was discussed by Drs. Katharine Dodd and James R. Dawson.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Convulsions in Children While Under General Anesthesia: Report of Case. O. S. Wyatt, Minnesota Medicine, February, 1940.

Having had to deal with convulsions in children while under general anesthesia, the author discusses this terrifying condition. He believes that atropine should be dropped from preoperative preparation, as atropine especially in an acute septic process causes a sharp rise of temperature in children and may provoke them to convulsions. He also believes that a calcium lack may cause twitchings and convulsions. Respiration should be controlled by carbon dioxide to prevent reduction of carbon dioxide content of the blood.

In his conclusions he outlines a definite plan of prevention and treatment. Check temperature before anesthetic is started, adrenalin must be given instantly, a soluble barbiturate must be on hand for instant use, ether anesthesia must be stopped at once on appearance of premonitory symptoms, chloroform, oxygen, and carbon dioxide must be ready for instant use, and calcium gluconate or dextrose may be necessary to stop convulsions.

### FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Hyperpyrexia. W. G. Shultz, M.D., Tucson, Arizona. Southwestern Medicine, XXII: 4: 136, April, 1938.

As to the methods of inducing artificial fever, those such as hot-water baths, electric light and infrared cabinets, etc., which raise the patient's temperature with heat applied from without the body, elevate the patient's pulse as much as thirty beats per minute higher than those patients treated by modalities which generate the heat within the body. It necessarily follows that the former meth-

ods are followed by a more frequent tendency to collapse; a more severe strain is placed on the nervous system and the patient's loss in strength and weight is frequently sufficiently great to offset the beneficial effect of the treatment on the condition being treated. Therefore, anyone who uses these methods when the safer and more effective one is available is forgetting the best interest of the patient whom he is serving. Artificially induced fever produced by the inductotherm method is also much more easily controlled, making it possible to reach a point with the induced fever which will be sufficiently high to be of distinct therapeutic value and yet be under control at all times so that no harm can befall the patient. It is possible with this method to maintain temperature of 107 degrees Fahrenheit for from five to fifteen hours with comparative ease and without more than very slight risk.

Artificial fever therapy has become a valuable adjunct in the treatment of gonorrhea, syphilis, pelvic inflammatory diseases, acute and chronic arthritis, multiple sclerosis, psoriasis, undulant fever, some cases of eczema, and a number of other infections and metabolic disease.

It is a specific for gonorrheal arthritis, the patient obtaining relief usually within an hour of treatment, coming out of the first treatment free of pain and remaining so.

Acute gonorrheal urethritis may be aborted with one treatment in many instances. This is dependent somewhat upon the thermal death rate of the organism with which you are dealing in the particular case. Sulfanilamide used in combination with the fever therapy increases its effectiveness, reducing the amount of each therapy necessary to obtain results. Hyperpyrexia will immediately relieve the pain and discomfort attendant to gonorrheal complications such as prostatitis, seminal vesiculitis, and epididymitis.

The greatest danger from artificial fever is from a reckless effort to produce high fever regardless of danger signals, inexperienced operators, inferior equipment, and ruthlessness on the part of physicians who will refer patients to others not properly equipped either with adequate apparatus or experience to administer such treatments.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Cancer of the Uterus. H. M. Tigert, Nashville, Tennessee. *Texas State Journal of Medicine*, 36: 673-675, February, 1941.

In the United States cancer ranks second in the causes of death and almost one-third of cancers in women occur in the uterus. Between 15,000 and 20,000 women die annually of cancer in this location. Cervical cancer is four to six times more frequent than cancer of the body of the uterus and is also more fatal. Anatomically, histologically, and functionally the body and the cervix of the uterus are widely different. These differences, together with the wide variation in their pathologic susceptibilities, account for the marked dissimilarity noted in malignant tumors of these two parts of the uterus. Cancer of the cervix is usually epidermoid in type, occurs early; metastasis is earlier, but is often associated with previous labors, and is more common before the menopause, when bleeding is usually considered harmless. Cancer of the body is usually adenocarcinoma, occurs somewhat later in life, does not metastasize early, seems to be unassociated with labor and more readily detected because it more often causes postmenstrual bleeding. Generally speaking, irradiation offers the best treatment for most cervical cancers and surgery is best in selected cases of corporeal carcinoma. Prophylaxis of cervical carcinoma is important and involves the prevention and adequate treatment of benign lesions of the cervix. The proper treatment of cancer of the uterus requires the services of gynecologist, pathologist, radiologist, and urologist.

The Treatment of Pelvic Endometriosis. Walter T. Dannreuther. *American Journal of Obstetrics and Gynecology*, 41: 461, March, 1941.

This communication from the Department of Gynecology, New York Postgraduate Medical School and Hospital, Columbia University, is based on the personal experience of the author in treating 115 women suffering from endometriosis. This covers ten years prior to July, 1940, all cases being treated surgically. A number of patients suffering from endometriosis were not operated upon by the author because of the comfort contributed to this group through the use of progesterone. A review of the cases shown in tabular form reveals that seventy-one patients or sixty-



one per cent had pain and abnormal bleeding, with eighteen patients or fifteen per cent suffering from dysmenorrhea. The most common symptoms of endometriosis are pelvic pain, abdominal bleeding, dysmenorrhea and dyspareunia with occasional urinary frequency, leucorrhea, and evident abdominal tumor. The majority of cases of adenomyosis and adenomyoma were found in women of more than thirty-five years of age, there being only two or less, one being thirty-one, the other being thirty-four. Hysterectomy is necessary for cure. A follow-up of the forty-nine cases so treated indicates a satisfactory end result when so treated.

The surgical judgment in treating widespread pelvic endometriosis is most important to every operator because forty per cent of cases occur in women of less than thirty-five years of age. A table included shows twenty-five patients or forty per cent between twenty-five years and thirty-five years, with thirty-eight or sixty per cent between the ages of thirty-six and sixty years. Although many gynecologists favor the routine radical removal of all ovarian tissue, the author's practice has been to perform either a supravaginal or total hysterectomy in patients more than thirty-five years of age, but to conserve as much normal tissue as possible in younger women, and he states that he has so far had no reason to regret it. *"I believe that it is better to risk the necessity of another operation than to castrate young women indiscriminately for any benign condition."* Intrauterine radium therapy may be effective in the treatment of adenomyosis, but the value of the roentgen ray therapy in cases of adenomyoma and chocolate cysts is questionable. Complete ovarian extirpation is essential for the cure of bladder and intestinal wall involvements. Certain technical details are described concluding the paper, the most important suggestion being to defer the actual pelvic operation until the pelvic organs have been freed from all intestinal and omental entanglements. Difficulties may be avoided by starting deep in the cul-de-sac and working upward. Further, Doctor Dannreuther states that it is better to leave part of the uterus attached to the bladder than to jeopardize the bladder wall by overenthusiastic separation when the uterovesical fold of peritoneum and the bladder wall are densely infiltrated. Should the lower uterine segment and the rectum be extensively involved this principle again holds true.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Value of Tryparsamide in the Treatment of Atrophy of the Optic Nerve Due to Syphilis. H. Campbell-Sutherland. American Journal of Ophthalmology, March, 1941.

Since certain authorities have again advocated the use of tryparsamide for the treatment of

neurosyphilis despite the presence of optic atrophy, the author reviews the literature and finds that the use of tryparsamide in these cases should be condemned, as the considered opinion of the majority indicates that the use of tryparsamide in the relatively few cases of tabes or of paresis of the tabetic type in which primary atrophy of the optic nerve occurs is not justified in the light of its dangerous potentialities. While the purely syphilitic amblyopic process is usually slowly progressive, a case is reported to show that it may sometime be acute, as this patient became blind within a period of three weeks.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Encephalitis Complicating Measles. Paul M. Hamilton, M.D., and Ralph J. Hanna, M.D. American Journal of Diseases of Children, March, 1941.

The authors have studied the findings in 241 cases reported in the literature with data from forty-four cases they have observed. The incidence of this condition has been estimated at one case per 1,000 cases of measles, but the authors think it occurs oftener. The study throws no light on the pathogenesis of the condition.

The pathology includes hyperemia, engorgement, and petechial hemorrhages in the brain, meninges, and spinal cord. The blood vessel walls are thickened, and the perivascular regions are infiltrated with cells that are mostly microglial cells.

The age incidence is the same as that of measles, over half the cases occurring between the ages of two and eight years, and about one-third between five and seven years.

Encephalitis may precede the rash of measles, but as a rule most cases developed from two to five days after the rash appeared.

Symptoms vary greatly, according to the severity of the condition and the part of the nervous system involved. There may or may not be fever. While torpor and lethargy which may deepen into coma is usual, restlessness, disorientation, irritability, and excitement may be marked. Convulsive seizures, tonic or clonic, generalized or Jacksonian, may mark the onset or may be a terminal event.

Irritability, irrationality, delirium, listlessness, psychosis, mania, negativism, catatonia, changes in the sleep mechanism and memory defects occur singly or in combination, and may remain, regress, recur or entirely disappear. The cranial nerves are more commonly affected than the peripheral nerves, and may result in aphonia, speech defects, deafness, blindness, and facial or bulbar paralysis.

Cases with spinal cord involvement show changed tendon reflexes, and these may be normal, hypoactive, hyperactive, absent or show clonus, and the picture changes from day to day. Superficial reflexes are hypoactive or absent. Signs of men-

ingeal irritation are commonly present. Stiffness of the neck is the commonest one sign and Kernig's sign is the next most frequent sign.

While at some stages of the disease the spinal fluid may be normal, sooner or later it will show increased pressure, increase in the cell count, increased globulin, and sugar may be increased, decreased, or normal.

The white blood cell count varied from 7,000 to 45,000 per cubic millimeter, the average being 16,130 with eighty per cent polymorphonuclears.

The prognosis for life is uncertain in a given case. Very young patients show a high fatality rate. Unfavorable are cases with hyperpyrexia of rapid onset and progressive bulbar paralysis. The prognosis as to sequelae is equally uncertain. The most frequent sequelae noted were mental defect, ataxia, spasticity, fixation of pupils, pareses, paralyses, aphasia, speech defect, idiocy, and convulsive state.

In general the prognosis may be stated as follows: there will be complete recovery in forty per cent of cases, recovery with residual defects in forty per cent, and twenty per cent will die.

Treatment has been unsatisfactory. The authors felt that shock therapy offers more hope than any other procedure thus far employed.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

Sarcoid. E. R. Bader. *Radiology*, Vol. 35, No. 4, p. 482, October, 1940.

Sarcoid is a disease which may involve the skin, bones, lymph nodes, and lungs, which was first described by Boeck of Norway as a skin disease. It presents clinical features of a chronic infectious granuloma persisting for years. It may spread from organ to organ, may relapse, seldom causes serious constitutional symptoms. It resists attempts at treatment and sometimes heals spontaneously. Arsenicals and ultraviolet light have been advocated as treatment. Microscopically, the lesions resemble tuberculosis, but clinically the patient does not have tuberculosis.

Two cases are reported, which have lung changes. Nothing is said about lesions in other organs except enlarged inguinal lymph nodes. Microscopically sections from a node in each case confirmed the diagnosis.

X-ray examination in each case showed floccular deposits in the lung parenchyma which were distributed throughout both lungs. Both cases healed spontaneously, one in a few months, the other after a couple of years.

ABSTRACTOR'S NOTE: At least two other organs have been described in the literature as possible sites of sarcoid involvement, the eye and the spleen. Many cases of sarcoid resemble silicosis in the lung manifestations. Others resemble miliary tuberculosis, and still others resemble diffuse tuberculosis.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Teratoma Testis. Survey of Thirty-Seven Autopsy Records. B. S. Baringer and David Earl. *Surgery, Gynecology, and Obstetrics*, March, 1941.

The majority of teratomas of the testis and their metastases are radiosensitive. By means of the high voltage roentgen therapy, the cures of this malignant disease have been doubled. The five-year controls at present are thirty per cent.

The radical operation of dissecting the retroperitoneal lymph tissue with its attendant mortality has been eliminated. Deep X-ray therapy is far more effective.

In thirty-seven autopsy surveys the youngest patient was nine months and the oldest forty-seven years, with an average age of 31.5 years. One case was a premature stillbirth of eight months.

There was a history of trauma of the testicle in six patients, but this was not accurate, as the exact site of the injury was not definite. It is doubtful that trauma plays any part whatever in teratoma testis.

There was twenty-seven per cent of embryonal carcinoma with lymphoid stroma, 24.3 per cent of embryonal carcinoma, twenty-seven per cent of embryonal adenocarcinoma, and 2.7 per cent of teratomatous adenocystoma. The two former types are much more radiosensitive than the two latter.

The right testicle was involved in 51.45 per cent of the cases and the left in 48.55 per cent. Abdominal cryptorchidism with teratoma occurred in 10.8 per cent of these cases.

The Aschheim-Zondek test was made in twenty-one cases. It was positive in eighteen, questionable in one, and negative in two. The conclusion at the Memorial Hospital was that the test is inaccurate as it is done at present. The test does not determine the histological type because many of the tumors are mixed and complex. However, the test is of value in predicting the prognosis, those with high levels die sooner than those with low levels.

Metastases from teratoma testis occur through both blood and lymph channels. The metastases through the blood is through the spermatic artery to the renal artery or aorta and thence to the heart and lungs.

The metastases through the lymphatics are usually first found in the upper abdomen, above the bifurcation of the aorta, because the lymphatics of the testicle generally drain into the abdomino-aortic nodes.

If the epididymis becomes involved in malignancy, the external iliac lymphatics in the lower abdomen may be the first site of metastases. These tumors never metastasize to the inguinal gland until the tunica vaginalis is involved. After the abdominal lymph nodes are involved, they may follow the lymph channels to the mediastinal and supraclavicular nodes, bronchial and cervical nodes.



From these foci, practically any organ of the body may become involved.

In these cases gross metastases were found in the lungs in twenty-nine cases. In the liver, twenty-eight cases. Retroperineal masses in twenty-two cases. In the kidneys, six cases. In the diaphragm, four cases; spleen, four cases; pancreas, three cases; adrenals, four cases; gastrointestinal tract, two cases; genitourinary tract, excepting kidneys, four cases; pleura, fourteen cases; mediastinal nodes, sixteen cases; bronchial nodes, thirteen cases; in the brain, three cases. Supraclavicular nodes were involved in seven cases; the ribs were involved in three cases; the spine in two cases; and the clavicle in one.

In almost all of the cases there was bilateral involvement of the abdomen, either of the nodes or of the intra-abdominal organs, regardless of which testicle was the site of the primary tumor.

## BOOK REVIEW

Cecil. Textbook of Medicine, Fifth Edition. W. B. Saunders Company, Philadelphia, 1941.

This popular textbook has now appeared in its fifth edition. The rapidity with which advances have been made in recent years, especially in the

fields of the vitamins and chemotherapy, soon outmoded textbooks, and necessitates constant revision.

A number of new subjects have been presented for the first time in this edition. Among these are several of practical importance. These are chronic bromide poisoning, disseminated lupus erythematosus, riboflavin deficiency, and regional ileitis. Further, some of the sections of former editions have been rewritten by authors especially qualified to write upon the given subjects.

Chemotherapy with various of the sulfonamide compounds has been well brought up to the date of publication of the text. This is especially true with regard to their use in infectious diseases such as pneumococcus and meningococcus infections.

Again with respect to the deficiency diseases, the discussions on vitamin deficiency are complete to the date of printing.

Numerous clinical conditions, uncommonly seen, are described briefly. Finally a moderate number of well-chosen photographs and roentgenograms serve to illustrate the text. Illustrations are an innovation in the textbook and add a great deal to its value.

R. H. K.

## SOUTHEASTERN SECTION

### American Congress of Physical Therapy, Seminar and Scientific Program

SUNDAY, MONDAY AND TUESDAY, MAY 25, 26, 27, 1941

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#### \*SEMINAR, Sunday Afternoon, May 25

- Regular Physicians and Qualified Technicians  
10 to 12 Noon. Registration—Exhibits.  
1 to 2 P.M. Physical Therapy in the Treatment of Infections.  
S. S. MARCHBANKS, M.D., Chattanooga, Tennessee.  
2 to 3 P.M. The Clinical Application of Dosage in Short Wave Diathermy.  
MILTON G. SCHMITT, M.D., Chicago.  
3 to 4 P.M. The Clinical Application of Ultra-violet in Ophthalmology.  
OSCAR B. NUGENT, M.D., Chicago.  
4 to 5 P.M. Modern Aspects of High Frequency Currents in Medicine.  
WALTER J. ZEITER, M.D., Cleveland, Ohio.  
Inspection of Exhibits

#### Monday Morning, May 26

##### 8 to 9 A.M., REGISTRATION

- 9 to 10 A.M. Clinical Application of the Portable Whirlpool Bath.  
RALPH S. EMERSON, M.D., Hempstead, N. Y., and KRISTIAN G. HANSSON, M.D., New York City.  
10 to 11 A.M. The Role of Rhythmical Movements in the Treatment of Lower Backache.  
FRANK H. EWERHARDT, M.D., St. Louis, Missouri.  
11 to 12 Noon. Physical Therapy in the Management of Fractures.  
JOHN S. COULTER, M.D., Chicago.  
Inspection of Exhibits

#### SCIENTIFIC SESSION

##### Monday Afternoon, May 26

1:30 to 4:30 P.M.

1. Clinical Value of Ultraviolet and Infrared Therapy to the General Practitioner.  
E. F. CARTER, M.D., Attending Physician, Hillsborough County Hospital, Tampa, Florida.
2. Clinical Studies of the Colon as Source of Infection.  
ELLIOTT M. HENDRICKS, M.D., Attending Roentgenologist, Broward General Hospital, Ft. Lauderdale, Florida.
3. The Application of Diathermy to the Irritable Colon.  
WALTER J. ZEITER, M.D., Director of Physical Therapy, Cleveland Clinic, Cleveland, Ohio.  
Business Session—Inspection of Exhibits.

#### BANQUET AND EVENING SCIENTIFIC SESSION, 6:30 P.M.

- A. The Scope of Physical Therapy in National Defense.  
JOHN S. COULTER, M.D., Associate Professor of Physical Therapy, Northwestern University, Chicago.
- B. Physical Therapeutic Measures in Office and Hospital Practice.

\*Registration fee, \$3.00, including evening banquet and instruction seminar. Advanced Reservations for the Seminar are urged and may be made with the Secretary, Kenneth Phillips, M.D., 1150 S. W. 22 Street, Miami, Florida.

NATHAN H. POLMER, M.D., Professor of Physical Therapy, Graduate School of Medicine, Louisiana State University, Medical Centre, New Orleans.

#### C. The Application of Physical Therapy to the Specialties.

OSCAR B. NUGENT, M.D., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College, Chicago.

#### SCIENTIFIC SESSION

##### Tuesday, May 27

- 8 to 9 A.M. Inspection of Exhibits.  
4. The Clinical Management of Peripheral Vascular Disease.  
WILLIAM G. STEPHENSON, M.D., Attending Physician, Erlanger Hospital, Chattanooga, Tenn.  
5. Physical Therapeutic Aids in Otolaryngology.  
CHARLES J. HEINBERG, M.D., Attending Otolaryngologist, Pensacola Hospital, Pensacola, Florida.  
6. Modern Aspects of Low Voltage Currents as Applied to Clinical Medicine.  
E. L. LIBBERT, M.D., Director of Physical Therapy, Good Samaritan Hospital, Cincinnati, Ohio, Lawrenceburg, Indiana.  
7. The Application of Climate Therapy to General Medicine.  
CHARLES I. SINGER, M.D., Attending Staff, Long Beach City Hospital, Long Beach, N. Y.  
8. Electromagnetic Induction in the Management of Pneumonia.  
MILTON G. SCHMITT, M.D., Clinical Assistant, Department of Physical Therapy, Northwestern University Medical School, Chicago.  
11:30 to 1:30 P.M. Luncheon and Exhibits.

##### Afternoon Session, 1:30 to 4:30 P.M.

9. A Resume of Fever Therapy in the Venereal Diseases.  
FELDA HIGHTOWER, M.D., Chief Surgeon, and Medical Director, Central Prison Hospital, Raleigh, N. Carolina.
  10. Physical Therapeutic Aids in the Management of Allergic Conditions.  
GEORGE W. OWEN, M.D., Attending Physician, Mississippi Baptist Hospital, Jackson, Mississippi.
  11. The Clinical Management of Low Back Pain.  
FRANCIS W. GLENN, M.D., Associate Orthopedist, Jackson Memorial Hospital, Miami, Fla.
- 4:30 to 5:30 P.M. Social Hour—Exhibits—Sight-seeing.

#### Evening SCIENTIFIC Session, 8 P.M.

Jointly with Chattanooga and Hamilton County Medical Association

- D. Physical Therapy in Relation to the Management of Joint Conditions.  
J. I. KENDRICK, M.D., Orthopedist, Cleveland Clinic Hospital, Cleveland, Ohio.
- E. Physical Therapeutic Measures in the Treatment of Stiff Shoulders.  
FRANK H. EWERHARDT, M.D., Professor, Physical Education; Assistant Professor, Physical Therapy, Washington University School of Medicine, St. Louis, Missouri.
- F. Artificial Hypothermia (Freezing Therapy)—Experience with 25 Cases.  
M. K. NEWMAN, M.D., Attending (Assistant) in Physical Therapy, North End Clinic, and Grace Hospital, Detroit, Michigan.

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Date of Quickening \_\_\_\_\_

Confinement \_\_\_\_\_

Number of Children \_\_\_\_\_

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Dead \_\_\_\_\_

Stillborn \_\_\_\_\_

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Miscarriages: \_\_\_\_\_

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Tonsils: \_\_\_\_\_

Heart: \_\_\_\_\_

Thyroid: \_\_\_\_\_

Breasts: \_\_\_\_\_

Lungs: \_\_\_\_\_

Abdomen: \_\_\_\_\_

Pelvic Measurements: Spines: \_\_\_\_\_

Crests: \_\_\_\_\_

Ext. Conjugate: \_\_\_\_\_

True Conj.: \_\_\_\_\_

Transverse of Outlet: \_\_\_\_\_

Type of Pelvis: \_\_\_\_\_

Pelvic Examination: \_\_\_\_\_

Blood Count: \_\_\_\_\_

Date—Hb \_\_\_\_\_

RBC \_\_\_\_\_

WBC \_\_\_\_\_

Blood Wassermann: \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

## BACK

## PRENATAL EXAMINATION

Date									
Blood Pressure									
Weight									
Vaginal Examination									
Height of Fundus									
Fetal Position									
M. H. S.									
Engagement									
Diet									
Stools									
Bleeding									
Headache									
Edema									
Pain									
Vertigo									
Nausea									
Pruritus									
Urine: Albumin									
Sugar									
S. G.									
Microscopic									

Method of Delivery and Complications: \_\_\_\_\_

Final Examination and Treatment: \_\_\_\_\_

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# *The JOURNAL of the* **TENNESSEE** *STATE MEDICAL ASSOCIATION*

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## PRESIDENTIAL ADDRESS

L. W. EDWARDS, Nashville

*Mr. Chairman, Ladies, Honor Guests, and Members of the Tennessee State Medical Society:*

Before making my remarks, I wish to take this opportunity to express my sincere appreciation for the great honor you have bestowed upon me, even though bestowed through your graciousness, rather than merit.

I wish to thank the officers and committeemen, individually and collectively, for their wholehearted spirit of cooperation in carrying out the duties of this office during the past year.

To the many county societies that have honored me by an invitation to speak at their meetings, I am duly grateful. It has been a most pleasant experience.

Times of stress and danger such as these are particularly likely to make all men pause to evaluate their own capabilities and duties. Now if ever, everyone is dreading personal futility and asking himself if he is spending his life to the best advantage. It is well for us as a profession to take stock of our assets and our obligations. Few men outside our profession realize as we do the extent to which the functioning of our complex civilization is dependent upon the knowledge and service of medicine. Realization of our great importance to other men is not born of arrogance. It carries with it the humble recognition on our part that our obligations are commensurate with our im-

portance. I have chosen to discuss tonight what I consider to be the responsibilities of the medical profession in the present era.

The first responsibility of the medical profession is not limited to the present era, but is age-old. In these times when our profession is beset by so many problems of an economic and political nature, we must not forget that our primary obligation always has been and always will be to make ourselves worthy to heal the sick. Unless we fulfill this fundamental duty, and do it to the utmost of our abilities, we cannot expect an attitude on the part of the public that is essential to our existence as a profession. We must prepare ourselves to give our patient the best that is known for him. Such preparation does not end with graduation from medical school. It is rather a matter of lifelong toil and sacrifice. In no other profession is it so difficult as it is in medicine for the individual to keep himself capable of practicing his profession worthily. In no past age has it been so difficult or so important for the practitioner of medicine to keep himself educated. New methods and techniques in diagnosis and treatment are continually being reported. New knowledge of the causes of diseases is being gained. New drugs are being introduced. Diseases which a few years ago were considered universally fatal are today being cured. The physician who does not struggle to acquire the latest information is not ful-



filling his sacred obligation to his profession and his patient.

The ways by which the doctor must strive to keep himself educated are numerous. Of first importance are: intelligent study of his own patients, by a never-relaxing study of books and journals, by taking postgraduate courses, and by taking a conscientious interest in the meetings of his medical societies. The medical society plays a major role in the process of keeping educated. It is the intellectual salvation of most physicians. As Osler has said, "the society should be a school in which the scholars teach each other." Here the doctor sees cases of unusual diseases which he might not otherwise learn to recognize. It is from the discussions in the medical societies that most physicians are best able to evaluate the countless new methods of diagnosis and treatment. The medical society for most of us is a necessity to keep our minds alert and receptive. The man who fails to take advantage of this form of education is failing to fulfill his obligations.

Today, the Tennessee State Medical Association is making available facilities for postgraduate study. Under the able leadership of the Committee on Postgraduate Education, and with the financial aid of the Commonwealth Fund, the Department of Public Health, the Medical Department of the University of Tennessee, the Vanderbilt Medical School, and the Tennessee State Medical Association, postgraduate instruction is being delivered to the physicians of the state, relieving them of the inconvenience of leaving their work. The physicians of this state are to be congratulated on having men on this committee with good judgment, and who are interested enough to plan and carry out these splendid programs.

Since the reorganization of the Public Health Department a few years ago a fine spirit of cooperation has developed between the Public Health Department and the practicing physicians of the state. Under the guidance of our present Commissioner of Health and the Public Health Council, progress is being made and the public is deriving great benefit as a result of this cooperation.

Statistics show a marked reduction in maternal and infant mortality, and in var-

ious communicable diseases. In 1931 the infant death rate per 1,000 live births was 66.7; in 1940 it was 55.1. The maternal death rate per 1,000 in 1931 was 7.0; in 1940 it was 4.8. In 1931 the death rate from typhoid in Tennessee was 10.1; in 1940 it was 2.1. In 1931 the death rate from diphtheria was 9.8; in 1940 it was 1.6. Of course the death rate from cancer and diseases of the heart have increased. This progress in preventative medicine tends to elevate the standards of the medical practice throughout the state.

Our dependence upon the medical society as a medium of education is by no means the only reason that we owe an obligation to organized medicine. Many problems of medicine cannot be dealt with by the individual physician and must be handled through organization. Only through organization have physicians been able to elevate the standards of medical education, to safeguard the interests of the profession, to influence public opinion in regard to medical problems. Never before has our profession been confronted with so many complex and menacing problems. The way in which these problems are solved will vitally affect the individual physician, but as an individual he can have little influence in helping to solve them in such a way as to protect the interests of the profession and the community. Only as a member of his professional group can he make the weight of his opinion felt. The doctor who fails to contribute in some way to the solution of these problems betrays all our professional traditions.

I have already touched upon our responsibilities to the public, but there is another aspect of this responsibility that deserves consideration. Our obligation is not fully discharged even after we have applied the best of modern scientific knowledge to the relief of our patient's immediate complaint. It is our duty to the public to act as a source of authoritative information regarding matters of health. Our daily contacts, if properly carried out, furnish us an opportunity to fulfill this educational function. Of course we all know that information given out indiscriminately will not necessarily be beneficial and that some patients will use

such medical knowledge to their own injury. It requires fine judgment to know what information to give what patient. As Oliver Wendell Holmes has said, "the patient is no more entitled to all the doctor's knowledge than he is to all the medicine in his saddlebags." However, most patients deserve to know enough to help them cooperate with the physician and to help them to maintain their health in the best possible state.

Occasionally the physician has opportunities to instruct a larger circle of the public than his own patients through such media as radio addresses or speeches to lay groups. The public needs and wants information about health. From every side the public is besieged by a mass of misinformation about medical matters, deliberately distorted, at times, for various commercial purposes. It is the doctor's obligation to see that as many people as possible get truthful information. Only by being a health educator can he protect the public and retain the confidence of the public.

The responsibilities of the medical profession which I will discuss last are more peculiarly limited to the present era. This is a time when our institutions, the way of life we cherish, our very ideals of democracy seem threatened. It is a time when everyone is, or should be, aware of his responsibilities to his country. Because we are aware of the importance of medicine in every phase of civilization, we have a particularly keen sense of the weighty responsibilities of the medical profession in this crisis.

Not many years ago we were told that a bigoted government could not long survive in modern times because science could prosper only in an environment of free inquiry, and if scientific discovery and progress failed, the state would become powerless before its rivals. Although this line of reasoning is doubtless correct for long term considerations, events of the past few months have abundantly shown how misleading it may be. There can be little doubt that free inquiry is most conducive to, if not essential for, the production of the highest scientific achievement. Yet for a short

time at least, an autocratic government can, if it still retains some technically trained men, force them to apply their energies to the immediate technical problems of prosecuting a war. They do not have the freedom and need not have the ability to pursue creative scientific discovery. Such a country probably will eventually disintegrate technically, but before it does it may have for a time been so successful in applying already discovered scientific facts to its awesome practical problems that it may overwhelm a country where true scientific ability is more abundant.

No longer can a democracy complacently assume that, because it has nurtured great creative thought in the sciences, it must surpass technically. The policy that in untroubled times has yielded the greatest fruit must temporarily be abandoned. In these times of crisis every man possessing technical abilities must be expected to apply them to the problems that are most pressing for the eventual security of his freedom. It is the responsibility of all physicians who believe in democracy to demonstrate that their wholehearted cooperation is more valuable than the service exacted by the rigid control of a dictator.

Although the public may at present be greatly impressed with the importance of engineers and chemists, and I would not detract from their importance, however we know that no technical knowledge can be of more importance to our country than medical knowledge. We all know of the ever-increasing prominence of the machine in the prosecution of war as well as in the routine of civilian life. Yet it must not be forgotten that these machines, whether on the battlefield or in the factory, are not only made by men but are operated by men. The knowledge of man, which is possessed by the medical profession and only by the medical profession, is of more fundamental and surpassing importance to the maintenance of any organization, whether in peace or war, than any knowledge of engineering, physics, or chemistry.

Military preparedness is today the most significant activity of the medical profession. Historians, as well as the general public, are not usually aware of the role



medicine plays in military affairs. Zinsser said, and it was true, then, that "soldiers have rarely won wars. They more often mop up after the barrage of epidemics. The epidemics get the blame for defeat, the generals the credit for victory." That statement is no longer true. In modern times, the military authorities have fully realized the essential character of medicine in the army, and governments are not slow to call for the services of their physicians. In the last war, nearly a third of the physicians of the United States were called to the colors.

The inauguration of selective service has brought a new responsibility to the medical profession. The position of a medical examiner for a draft board carries great responsibilities: first to see that the service obtains the proper personnel; and second, to see that the registrants get fair and impartial consideration. Just decisions require alertness, courage, honesty, and sometimes sacrifice of private practice.

On the doctor in active service in the army rests the responsibility of maintaining the integrity of the army by protecting its health. The doctor in this position has not fulfilled his responsibility merely by answering the call to the colors. Many a physician may chafe under military routine, but it is important that he should not lose any of his alertness or imagination, for problems are sure to arise that are new, and the fate of mankind may depend on the rapidity with which medicine can meet them.

Modern conditions of warfare have already raised so many new medical problems that they are occupying the attention not only of army doctors, but of a great many civilian investigators in the medical schools. The latter have been directed through the agency of the National Research Council to those problems most vital to our national defense. Some of the most pressing of these problems are concerned with aviation medicine, chemotherapy, and the cause and treatment of traumatic shock. Although the present emergency has accelerated the study of these problems, the results will be of benefit to all humanity in time of peace.

The medical problems concerned with

aviation furnish an excellent example of the ultimate dependence of machines on men. Every new technical advance in aviation has brought with it problems of a physiological nature. The point has been reached where the performance of an airplane is limited more by the physiological limitations of the man running it than by the pure mechanism of the plane. The height to which an airplane can fly is now set, not so much by insurmountable mechanical problems, as by the minimum oxygen pressure tolerated by a man. Somewhere around 45,000 feet the alveolar pressure of oxygen, even though the man is breathing pure oxygen, is too low to sustain life. If this limitation is to be removed, the problem cannot be solved by the engineer without the assistance of the man who understands the human machine—the physician.

As we have often been reminded, modern war is "total war" and requires the mobilization of all the resources of a country. Industrial workers and farmers are now no less important than soldiers. The responsibility of the physician to maintain the health of the civil population is no less weighty than that of the military surgeon to protect the army. The enormously rapid expansion of industry that is now taking place in this country has already given rise to new and unexpected problems in industrial hygiene.

Such problems as these may affect our national defense more vitally than those of a more obviously military nature. In our present complex urban society, withdrawal of the knowledge and services of the medical profession would result in the disintegration of civilization. In the last war, because of an unwise policy in calling civilian physicians to military duty, medical education and civil practice were badly disorganized. This mistake must not be repeated.

The present emergency has placed a great burden and a great responsibility on the medical profession of this country. American physicians have never failed in the past to show themselves worthy in times of danger, and I am sure they will not fail now. While a great responsibility confronts our profession, it is at the same time a great opportunity to help in the preservation of

our democracy. It is to be hoped that in this crisis the medical profession of America will fulfill its obligation of its own free will, and can serve its country better than the regimented professions of less happy lands can be coerced to do.

In calling attention to the responsibilities of the profession in the present era, it is not intended to convey the idea that the profession has ever failed to fulfill its obligations, whether civilian or military. On the contrary, it emphasizes the fact that American medicine is today, as a result of progress and rapid advancement, in a better state of preparedness to render service than at any time in the past.

It has reached its present high level of preparedness because of the fact that it has not been impeded by any form of regimentation. Medicine as a profession has always assumed a heavy responsibility in keeping up its part in the complex scheme of a nation's life, and it will continue to do so as long as it remains a part of a true democracy. Last June the Surgeon General of the Army called upon the American Medical Association to mobilize the medical resources of this country. This can be construed as evidence of the confidence the government has in the integrity and ability of organized medicine.

Under the direction of the Military Preparedness Committee, appointed by the Speaker of the House of Delegates, and through subcommittees in each state and county, the physicians have been registered and are being classified according to information given on the questionnaire as to age, physical fitness, professional ability and availability for service—service to the civilian population, industry, and the combat forces. Questionnaires were mailed to 185,795 physicians registered to practice in the United States and its territories. Of this number 145,000 are actually engaged in practice. Approximately 148,000 replies have been received. This voluntary mobilization is in contrast to mobilization and coercion in the dictator countries. Sacrifices will necessarily have to be made to carry on the program during this emergency period, but at the same time benefit will accrue through activities in research and study applied to special medical problems, which will be of value to the civilian population in peacetime.

The medical profession can be depended upon to meet all its obligations, to serve and to sacrifice in peace, and in war if necessary, to the end that the freedom, not alone of the medical profession, but of all who love and strive for freedom, shall be retained.



# THE TREATMENT OF PENETRATING WOUNDS OF THE BRAIN\*

COBB PILCHER, M.D.,† Nashville

It is an everlasting credit, as well as a source of satisfaction, to the medical profession that the perennial destruction and barbarism of war, to which mankind seems periodically doomed, have consistently led to medical advances and improvements in scientific knowledge, the ultimate application of which has resulted in the preservation rather than destruction of human life. Hippocrates said, "War is the only school for the surgeon." From the casual battlefield observations of Ambroise Paré to the carefully organized researches of Graham, Cannon, Cushing, Bárány, and many others in the World War of 1914-18, the medical history of war is a story of achievement for the benefit of mankind, applicable in civilian life, as well as in the military field.

We need not hesitate, therefore, occasionally to re-examine subjects that may be of military importance, even in peacetime—and it is imperative that we do so in times of grave national danger.

Nor can I be accused of choosing too narrowly specialized a subject, in speaking tonight of penetrating wounds of the brain, for, in civilian as well as in military life, the majority of such wounds must, of necessity, be cared for by the general surgeon. It must not be forgotten that every compound fracture of the skull is potentially a penetrating wound of the brain.

My own particular interest in the subject was aroused some years ago, when I saw a negro man shortly after he had received a stab wound of the brain. The knife blade was broken off and firmly held by the skull. Several observers disagreed. Should the blade be removed, should an open operation be performed, or should it be left alone? Actually, the blade was forcibly removed, no other operation was performed, and the patient recovered with no subsequent symptoms. The controversy, however, led to a comprehensive review of the literature and

an extensive experimental study, reports of both of which were published in 1936.<sup>1</sup> From this study, from later clinical observations, and from experiments now in progress, a rational plan of treatment of wounds of the brain may be evolved. Most of the factors in such a plan are by no means original. Rather are they based upon sound clinical and experimental evidence from all sources.

## PRIMARY TREATMENT AND TRANSPORTATION

No definitive treatment of a wound of the brain should be attempted until adequate time and facilities for a complete neurosurgical procedure are available. Primary (or first-aid) treatment should consist of superficial cleansing and shaving, control of hemorrhage by a moist or vaseline-gauze dressing and treatment of shock, if present, by warm blankets, intravenous fluids or transfusion of whole blood, serum or plasma. Most important is rapid transportation to a point where operation can be performed. The patient should be handled as gently as possible and the head should be moderately elevated (unless shock is present). Speed is essential. In the present war, the German Army has employed evacuation of wounded by airplane with considerable success (Tönnis<sup>2, 3</sup>). It should be remembered that, in open head wounds, the low atmospheric pressure of high altitudes may increase cerebral herniation.

## THE TIME ELEMENT

The importance of the time factor in the prevention of fatal cerebral infection cannot be overemphasized. In my experiments, immediate removal of a protruding foreign body resulted in healing in all experiments; removal of the foreign body in twelve hours resulted in seventy-five per cent recovery; and removal after twenty-four hours resulted in seventy-five per cent fatality. This point is admirably illustrated by two consecutive cases of gunshot wounds.

*Case 1* (Vanderbilt University Hospital No. 82591), a twenty-four-year-old farmer, was admitted sixteen hours after having been shot in the right frontal region at close

\*Read before the Academy of Medicine of Lucas County, Toledo, Ohio, October 25, 1940.

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range by a thirty-two-caliber pistol. He had been unconscious forty-five minutes and had vomited several times, but was alert and rational when admitted. He had slight weakness of the left arm and leg. A ragged, dirty puncture wound was seen in the right frontal region. Roentgenograms showed the shattered bullet deep in the right frontal lobe, with fragments of lead and bone marking its path. At operation, the skin wound was excised and all foreign material (including fragments of his hat!) and damaged cerebral tissue removed by the suction-irrigation method. The wound was closed without drainage.

On the second postoperative day, the temperature rose and the wound was puffy and red. It was reopened and profuse purulent exudate evacuated. The abscess cavity slowly healed from the bottom, the inevitable cerebral fungus gradually retracted, and the wound was finally healed on the hundred and eighteenth day.

Six months after injury, he began to have Jacksonian convulsions and these came with gradually increasing frequency and severity. Finally, two years later, he was again operated upon. The huge cortical cicatrix was excised down to the ventricle with the electrosurgical current and the dural defect filled with a graft of facia lata taken from the patient's thigh. He has been greatly improved, but has had several widely spaced convulsions in the year and a half since the last operation.

*Case 2* (Vanderbilt University Hospital No. 83617), a housewife, aged forty-five, was admitted while Case 1 was still in the hospital on his first admission. She had been greatly depressed and attempted suicide by shooting herself with a twenty-two rifle in the left frontal region. She was rushed to Nashville from her Alabama home and was in the operating room within five hours of receipt of the wound. Again, there were no serious neurological symptoms and again the wound was thoroughly débrided, the bullet removed, and the wound closed tightly. Five days after operation, the wound was well-healed and no untoward symptoms had occurred. She was kept in the hospital for psychotherapy and was subsequently sent to a psychiatric institution.

Her depression gradually cleared up and she has led a normal, symptom-free life for the past three years.

*Comment.* It is impossible to escape the contrast between these two cases. The protracted hospitalization, the second operation, the lifetime of convulsions in the first case might well have been avoided had his operation been possible as soon as was true in the second case.

#### THE REMOVAL OF FOREIGN BODIES

In the two cases just related, the foreign bodies were completely removed. However, this is not always feasible or wise. Great depth of penetration or lodgment in the opposite hemisphere from the point of entrance renders the difficulty of removal and the damage caused thereby too great to justify the procedure. In this connection, it is important to remember that the bullet itself is not often a source of pathogenic bacteria. Contamination is much more likely to arise from fragments of skin, hair, clothing, dirt, and other in-driven material. If the cleansing of the wound is complete, if damaged tissue is thoroughly removed, if the wound is closed within a few hours, the danger of a retained projectile is minimized. The tolerance of the brain for foreign bodies is well shown in the following cases:

*Case 3* (Vanderbilt University Hospital No. 33535), a schoolboy, seventeen years of age, was admitted one hour after a rifle bullet entered his left temporal region. He was very drowsy, but understood simple commands. He could not speak, and had a right hemiplegia. Roentgenograms showed the bullet tract extending diagonally backward and to the right, far across the midline. The bullet was embedded deep in the right parieto-occipital region.

The wound of entrance was excised, several superficial fragments of bone and lead were removed, and the wound closed without drainage. No attempt was made to remove the main portion of the bullet.

The aphasia and hemiplegia had almost disappeared by the third day, but he remained incontinent of urine and feces for eight days. The wound healed by primary intention. He was discharged on the eleventh day with no residual symptoms except



slightly exaggerated tendon reflexes on the right.

He has been followed for over ten years without exhibiting any symptom referable to the nervous system.

*Case 4* (Vanderbilt University Hospital No. 109617), another schoolboy of fourteen, was accidentally shot in the right forehead with a twenty-two rifle by a playmate. The bullet passed to the left and backward and its major portion lodged deep in the left frontal lobe. He had no unconsciousness, vomiting, or other neurologic symptoms and the examination was negative except for the wound of entrance just above the hair-line on the right forehead. At operation, three and a half hours after injury, the skin wound was excised, the bony opening enlarged to permit adequate access to the brain and all fragmented bone, damaged brain tissue and accessible bullet fragments removed by suction-irrigation. The opening in the falx cerebri was found, but no attempt was made to remove the bullet from the left hemisphere. A periosteal graft was used to close the dural defect and the wound closed without drainage. The wound healed per primum, there were no postoperative symptoms, and he was discharged on the eleventh postoperative day.

*Comment.* The controversy over removal of foreign bodies retained in the brain has been reviewed elsewhere.<sup>1</sup> The two cases just mentioned support the rational advice of Cushing<sup>4, 5</sup> that foreign bodies should be removed only if their removal does not increase the damage already suffered by the brain. This contention was also strongly supported by the experimental study already cited.<sup>1</sup>

#### THE STRUCTURES INVOLVED BY THE WOUND

Needless to say, the location and depth of the wound have a profound influence not only upon the degree of residual disability, if the patient recovers, but upon his chances of recovery. In addition to the high mortality resulting from laceration of large arteries or the great venous sinuses, two other factors are of great importance.

Penetration of the ventricular system adds enormously to the danger, particularly if very early operation is not possible, for

contaminating organisms are scattered widespread in the cerebrospinal fluid. This danger has been pointed out by Harvey,<sup>6</sup> Horrax,<sup>7</sup> Cushing,<sup>4, 5</sup> and others. Experimentally, the mortality rate was increased by ventricular penetration from about fourteen per cent to 100 per cent on protruding, retained foreign bodies.<sup>1</sup>

The second factor is injury of the brain stem, midbrain or hypothalamic region. Wounds involving these regions usually terminate fatally. Further, these structures may be unexpectedly involved by seemingly distant wounds, as shown in the following case.

*Case 5* (Vanderbilt University Hospital No. 109511), aged twenty-eight, was admitted twenty-seven hours after having been stabbed in the left frontal region. The weapon was unknown. When struck, he had fallen suddenly unconscious. After several hours, he had begun to be restless, but he had not spoken or moved the right extremities. When admitted, he was in a stuporous state, but responded to pain by movements on the left. His blood pressure was 170/92, temperature 102.4 degrees Fahrenheit, pulse rate forty-eight, respiration eighteen. Pupils were contracted due to morphine given before admission. There was a right hemiplegia. At operation, a narrow puncture wound was explored down along the surface of the frontal lobe to the Sylvian fissure and into the temporal lobe. There was no significant hemorrhage and no gross infection. The dura was left open and the wound drained, but subsequently, when cultures were found to be sterile, the drain was removed and the wound healed without infection. The patient did not do well, however. He remained stuporous, the hemiplegia persisted, and he had retention of urine. Speech slowly returned. Spinal fluid pressure was normal and contained only a few red blood cells and no organisms. He developed bronchopneumonia and died on the twentieth postoperative day.

At necropsy, the puncture wound was found to extend into the posterior fossa, to completely transverse the pons, which showed extensive necrosis, and to terminate in the fourth ventricle.



### THE LATE CASES

Frequently, the patient will not be seen until frank infection is already present (or infection may develop in those seen in the borderline period from twelve to twenty-four hours, as in Case 1). In such cases, immediate establishment of open drainage offers the only hope of avoiding a fatal outcome. The bony opening should be about three to four centimeters in diameter, the dura left open, and a soft tube or even small gauze packing inserted to the bottom of the cavity. There will develop the once-dreaded cerebral fungus. However, the danger to be anticipated from this is in reality small if drainage is adequate and the cerebral infection becomes localized.

In still later cases, the patient may be seen after healing of such an infection because of convulsions, paralyses, or other disabling symptoms. In many such cases, excision of the cicatricial mass in the brain will be indicated, as was true in Case 1.

Another important lesson in this connection may be learned from Case 7 (Vanderbilt University Hospital No. 95256) who had such a cerebral scar following an infected stab wound. Excision of the scar was postponed on his first admission, but he returned four months later (sixteen months after his original injury) in a status epilepticus and operation was considered essential. However, it was too soon and a violent flare-up of the infection terminated fatally after excision of the large cicatrix.

### TECHNICAL CONSIDERATIONS

A few technical matters merit consideration here.

In traumatic neurosurgery, carefully trained and experienced operative teams and elaborate equipment, though desirable, are not essential. Two devices, however, are almost indispensable. These are a strong suction apparatus and a high-frequency, damped-wave electrosurgical unit. Without them adequate débridement and control of hemorrhage are all but impossible.

Electromagnets and elaborate devices for the localization of foreign bodies have been advocated (cf. Pilcher<sup>1</sup>), but their use is,

in most instances, unnecessary and may sometimes be injurious.

The term "débridement," as applied to cerebral wounds, is subject to certain conservative modifications. All macerated scalp tissue should be excised, all free fragments of bone removed. Devitalized brain tissue and all accessible foreign material should be removed, but the rule of not increasing the injury already sustained by the brain should be rigidly followed. Gentle irrigation will "float up" all but the largest foreign fragments, and careful suction will cleanse the tract and facilitate complete hemostasis. Temporary gentle packing with moist cotton may be useful. Gauze should never be used on the brain.

All wounds which are free of infection should be closed tightly with fine silk stitches. A drain inserted into the brain is an open invitation to infecting organisms and increases the danger of cerebral herniation. If there has been extensive loss of skin, it will often be possible to close the defect by means of "relaxation incisions."

### CHEMOTHERAPY

To ignore the revolutionary influence of the new drugs of the sulfonamide group in the treatment of any type of potentially infected wound would be wanton neglect. I am informed that both the German and Canadian armies are using them prophylactically as well as therapeutically.

The exact field of usefulness and the true effectiveness of these drugs in craniocerebral wounds contaminated by mixed types of bacteria have not yet been finally determined. Extensive studies on this subject are in progress in our laboratory and elsewhere.

### SUMMARY

In summary, the following therapeutic suggestions may be made:

1. A penetrating wound of the brain constitutes a grave surgical emergency and should be operated upon at the earliest possible moment.

2. The skin wound should be excised and fragmented bone, damaged brain tissue, and foreign material removed as completely as possible without increasing the damage to the brain.

3. Early wounds should be closed without drainage.

4. In wounds which are already infected adequate open drainage should be established.

5. Chemotherapy will undoubtedly prove to be an important adjunct to surgical measures.

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## THE TREATMENT OF BACILLARY DYSENTERY WITH SULFATHIAZOLE:\* REPORT OF NINETEEN CASES†

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Since July, 1940, sulfathiazole has been routinely used in bacillary dysentery on the Medical Service at John Gaston Hospital. A preliminary report on its beneficial effects was published in September, 1940.<sup>1</sup> Information on the subject in the literature has been scanty. No clinical articles have appeared. There have been several papers on in vitro experiments. Most outstanding of these was a report by Libby and Joyner,<sup>2</sup> revealing that in vitro sulfathiazole is more effective against the Flexner dysentery bacillus than the other sulfanilamide compounds. Our experience up to date covers nineteen cases. We are so encouraged that we are reporting these cases in detail.

*Case No. 1.*—Record No. 7812, M. H., age forty-two, colored, female, was admitted on June 17, 1940, with bloody stools containing mucus, and a low-grade fever of seven days' duration. A stool culture taken on June 18 was positive for bacillus dysenteriae (Flexner). The patient became semicomatose on June 24 and sulfathiazole was started on June 25. At this time, the stools were twelve to thirteen daily. During the following twenty-four hours, the general condition underwent definite improvement; the patient became rational, and the stools much less frequent. They no longer contained blood or pus, but still contained mucus. Recovery was slow, but steady from then on. The dysentery continued, but gradually lessened until July 9, when the stools became normal. The patient was discharged on July 15 as cured. Blood sulfathiazole concentrations were three milligrams per cent, 3.4 milligrams per cent,

and 2.1 milligrams per cent on June 28, July 1, and July 5, respectively.

*Case No. 2.*—Record No. 8366, C. J., age fifty-one, colored, female, was admitted on July 4, 1940, in coma with temperature, 104 degrees Fahrenheit. There was a history of convulsions three hours previously, and of seven to ten bloody, green, watery stools daily. Onset was uncertain. Sulfathiazole was begun on July 7 with prompt improvement in the general condition and lessening in the number of stools. She had four stools on July 6, two on July 7, and thereafter the stools were soft, becoming formed on July 10. Blood sulfathiazole concentration on July 8 was three milligrams per cent. Stool culture was negative.

*Case No. 3.*—Record No. 8656, D. M. P., age fifteen, white, female, was admitted on July 8, 1940, with fever and general aching of one week's duration, and dysentery of four days' duration. The stools numbered four to six daily, and contained mucus, blood, and pus. A stool culture taken on July 9 was positive for bacillus dysenteriae (Flexner). Sulfathiazole was started on July 9. There were five stools during the ensuing twenty-four hours, but the clinical improvement was evident. The dysentery ceased on July 11, sulfathiazole was then discontinued. The patient remained free of symptoms and was discharged on July 13, the fifth day after admission. Blood sulfathiazole concentration was 3.2 milligrams per cent on July 10.

*Case No. 4.*—Record No. 9911, E. H., age thirty-seven, colored, male, was admitted on August 8, 1940, with ten to twelve typical dysentery stools daily during the previous six days. Stool culture taken on August 9 was positive for bacillus dysenteriae (Flexner). Sulfathiazole was started immediately on admission. During the ensuing thirty-six hours, there were eight stools, and the amount of blood and mucus was lessened. By August 11, the patient was symptom free. He was discharged as cured on

\*Sulfathiazole is being furnished to the Medical Service of John Gaston Hospital for experimental purposes by the Winthrop Chemical Company through its Southern Research Division Head, Mr. Kenneth M. Smoot, New Orleans, Louisiana.

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August 16. Blood sulfathiazole concentration was 3.1 milligrams per cent on August 9.

*Case No. 5.*—Record No. 9912, L. H., age thirteen, colored, male, was admitted on August 8, 1940, with a history of twelve to fifteen typical dysentery stools during the previous seven days, accomplished by low-grade fever. Stool culture taken on August 9 was negative for bacillus dysenteriae. (Cultures on three members of family were positive for bacillus dysenteriae, Flexner type. Two of these died. They did not receive sulfathiazole.) Sulfathiazole was started on admission. During the ensuing forty-eight hours there were six stools. These were more formed than previously and contained less blood and mucus. The patient was symptom free August 12 and he was discharged as cured on the seventeenth. Blood sulfathiazole concentration on August 9 was 4.5 milligrams per cent.

*Case No. 6.*—Record No. 10142, W. H., age twenty-one, colored, male, was admitted on August 13, 1940, complaining of a bloody diarrhea with cramps and tenesmus of three days' duration. Stool culture taken on August 13 was negative. Sulfapyridine, five grams, was given by mistake during the first twelve hours after admission. After this, sulfathiazole was instituted. No improvement was manifested while on sulfapyridine. The first improvement was noted on August 16, forty-eight hours after sulfathiazole was started. Stools were normal from August 17 to the date of discharge, August 21. Blood sulfathiazole concentration on August 15 was less than one milligram per cent.

*Case No. 7.*—Record No. 10241, L. T., age twenty-three, colored, male, was admitted on August 15, 1940, with dysentery of four days' duration, the stools numbering twenty to thirty daily and containing blood, pus, and mucus. Stool culture taken on August 16 was negative for bacillus dysenteriae. Sulfathiazole was started immediately on admission. Spectacular improvement in the general condition and character of stools was evident on August 16. On August 17 the bowel movement was normal. Improvement was permanent from then on. The drug was discontinued on August 19, and

the patient was discharged on August 21. Blood sulfathiazole concentration was 3.9 milligrams per cent on August 16.

*Case No. 8.*—Record No. 7092, L. S., age thirty-six, white, male, was admitted on July 31, 1940, with abdominal pain and frequent stools with blood and pus of three days' duration, as many as twenty and thirty daily, marked tenesmus, severe abdominal griping, edema of extremities, and slight ascites. Stools were watery, bloody, and contained mucus and pus. He was weak and dehydrated. Temperature 101 degrees Fahrenheit, pulse 110. Tender in epigastrium. Incontinent. Stool examination on admission revealed many strongyloides stercoralis and endamebae histolyticae. Stool culture on same date was positive for bacillus dysenteriae (Flexner). Emetine hydrochloride, one grain daily, was given for six days; and carborsone, four grains two times a day, was given for ten days. This regimen brought no improvement symptomatically, but the amebae disappeared from the stools, the worms remaining. Gentian violet enteric-coated tablets, one-half grain three times a day, were given for seven days with no improvement in the bowel condition, but during this period the temperature returned to normal. Sulfathiazole was started on August 18. By the second day, stools had decreased from twenty to thirty daily to four daily; on the third day of medication, formed stools were passed for the first time. Stool formation and passage were normal from then on, appetite returned, and all symptoms and findings disappeared, including edema. Total plasma protein was 4.8 milligrams per cent on August 13. A stool examination on August 29, following one ounce of magnesium sulfate, was negative for amebae, but positive for strongyloides stercoralis, and culture of the stool was negative for the typhoid-dysentery group. Blood sulfathiazole concentrations were 1.7 milligrams per cent, 1.5 milligrams per cent, and .9 milligram per cent on the twenty-first, twenty-fourth, and twenty-eighth of August respectively.

*Case No. 9.*—Record No. 602, F. T. M., age forty, white, male, an alcoholic for twenty years, was admitted on August 15, 1940, with a diarrhea of eight or ten stools

daily, badly dehydrated; the stools on examination being watery with much blood and mucus. There were general abdominal tenderness and a pulse rate of 120. He was given general anti-diarrheal measures for four days. Meanwhile the diarrhea became worse. On the third day after admission there were twenty-two stools. Sulfathiazole was started on August 19. There were twenty stools on August 20. The number gradually decreased. On August 25 stools were formed for the first time. There was an improvement in other symptoms from August 22, the fourth day of medication. A stool culture August 16 was negative for the typhoid-dysentery group. Blood sulfathiazole concentration was 3.9 milligrams per cent on August 23. Chemotherapy was discontinued on August 25. He was discharged on August 29.

*Case No. 10.*—Record No. 8708, I. P., age twenty-two, white, male, was admitted on July 9, 1940, with dysentery, six to ten bloody stools daily for three days. Stool culture was negative. Sulfathiazole was started on admission. The dysentery and symptoms continued for two days, then improved abruptly, the patient becoming symptom free. No blood concentrations were performed. One sibling on the pediatrics service, and another on the medical service had bacillary dysentery, bacillus dysenteriae (Flexner) on culture. The sibling on the medical service not treated with thiazole ran fever and had dysentery for eight days after admission before improving spontaneously.

*Case No. 11.*—Record No. 1389, W. K., age sixty-one, colored, male, was admitted on November 11, 1940, with diarrhea of five days' duration; stools were watery; there were tenesmus and abdominal pain. He also had bronchial asthma and mild diabetes mellitus. Sulfathiazole was started on November 13. Improvement was definite after twenty-four hours, and recovery was complete after forty-eight hours. There were no stools during the ensuing three days, and an enema was then given. Stool culture on November 12 was positive for bacillus dysenteriae (Flexner). Blood sulfathiazole concentration on November 14 was six milligrams per cent; on November 16 was 5.3

milligrams per cent; November 18 was 4.2 milligrams per cent. A stool culture on November 16 was negative for the typhoid-dysentery group. Blood sulfathiazole concentration on November 20 was 3.3 milligrams per cent; on November 21 was 2.6 milligrams per cent.

*Case No. 12.*—Record No. 17551, M. C., age twenty-two, white, female, was admitted on February 18, 1941, with malaise of four days' and diarrhea of five hours' duration. There were ten stools during this period. Stool examination revealed mucus, pus, and blood; no amebae. Stool culture made by rectal swab was negative for the typhoid-dysentery group. Sulfathiazole was started on February 19. Improvement was evident during the next twenty-four hours, and was so rapid that it was with difficulty that she was persuaded to remain in the hospital. She was discharged, symptom free, on February 23. Blood sulfathiazole concentration on February 21 was 4.3. She also had a recently arrested tuberculosis.

*Case No. 13.*—Record No. 11283, J. J., age forty-four, colored, male, admitted September 7, 1940, with malaise and dysentery of four days' duration, with stools numbering thirty to forty daily, with severe abdominal pain and tenesmus; blood, mucus, and pus in the stools. He also had during this period chilly sensations and fever. Temperature on admission was 100 degrees Fahrenheit. During first twelve hours in hospital sixteen stools were counted, the patient spending the greater part of the time on the bedpan. Sulfathiazole was started on admission. There were only four stools on the following day, and the symptoms had improved markedly. By September 10 stools were numbering two daily, were formed; and the disagreeable symptoms had disappeared. From then on convalescence was smooth. Sulfathiazole blood concentration on September 9 was six milligrams per cent, on September 13 was 8.6 milligrams per cent. Stool culture on September 7 was negative for the typhoid-dysentery group. Patient was discharged as cured on September 15.

*Case No. 14.*—Record No. 11310, L. V., age twenty-nine, colored, female, admitted



September 7, 1940, with diarrhea for two days with fifteen to twenty stools per day. Movements were foamy and contained mucus. Admission temperature was 102.8 degrees Fahrenheit. Stool culture on September 9 was negative for typhoid-dysentery group. Sulfathiazole was started on admission. There was an abrupt decline in fever, the temperature reaching normal by the second day. After twenty-four hours of medication the stools numbered one daily. Patient discharged on September 11 as cured.

*Case No. 15.*—Record No. 13272, A. L., age twenty-four, white, female, was admitted October 26, 1940, with diarrhea and vomiting of twenty-four hours' duration, having passed during this time fifteen to twenty stools containing green, watery material, mucus, pus, and bright red blood. There was much associated tenesmus. Temperature on admission was 102 degrees Fahrenheit. Sulfathiazole was started twelve hours thereafter and there was a prompt decline in temperature with a return to normal within thirty-six hours. On October 28 there were two stools and the next day none; on the day following this one stool. Thirty-six hours following the institution of therapy there were no symptoms. Blood sulfathiazole concentration on October 28 was one milligram per cent, and on October 29 was 1.4 milligram per cent. Stool culture and rectal swab on October 27 were both positive for bacillus dysenteriae (Flexner). On November 1, 1940, the culture was still positive. Culture on October 28 was negative for typhoid-dysentery group. Patient was discharged as symptom free on November 3.

*Case No. 16.*—Record No. 7801, E. C., age twenty-nine, white, female, admitted October 19, 1940, with diarrhea associated with nausea and vomiting of three days' duration. Stools numbering fifteen to twenty daily associated with straining and tenesmus. Stools were composed of mucus, blood, and pus. Stool culture on October 22 was negative for typhoid-dysentery group. Sulfathiazole started on admission. During the ensuing twenty-four hours there were three stools with cramping and tenesmus. Symptoms had disappeared by October 23.

Improvement was notable from onset of treatment. Blood sulfathiazole concentration on October 21 was 3.4 milligrams per cent, and October 23 was 4.6 milligrams per cent.

*Case No. 17.*—Record No. 11229, F. L. L., age eighteen, colored, female, admitted on September 6, 1940, with a diarrhea, chills, and fever of ten days' duration, with stools averaging eight to ten daily, accompanied by much tenesmus and cramping. The stools contained blood and pus. Sulfathiazole was started on September 7. During the ensuing twenty-four hours there was but one stool. General improvement was manifested from the beginning of chemotherapy and she was discharged three days after admission symptom free. No blood concentrations were performed. No stool culture made.

*Case No. 18.*—Record No. 10888, E. A., age forty-two, colored, female, was admitted on August 30, 1940, with diarrhea of three weeks' duration, passing six to twenty watery stools daily. Stools contained blood and pus, and were accompanied by straining and pain, vomiting, weight loss, and fever. On examination she showed emaciation, temperature 102 degrees Fahrenheit, general abdominal tenderness with slight distension and rigidity. Total leucocyte count was 28,000, with neutrophils ninety-five per cent. Stools contained much pus and blood but no amebae. Three stool cultures were negative for the typhoid-dysentery group. During the first forty-eight hours following admission, the course was progressively worse, peritonitis becoming definite. Sulfathiazole was started on the third day. Death occurred on September 6, which was the sixth day. Blood sulfathiazole was 1.2 milligrams per cent on September 2. No autopsy.

*Case No. 19.*—Record No. 2312, F. R., age twenty-five, female, white, was admitted on July 21, 1940, with diarrhea, vomiting, high fever, and abdominal pain of three days' duration. On admission temperature was 101.8 degrees Fahrenheit, there was diffuse abdominal tenderness, bowels were moving every ten to fifteen minutes. Stools contained blood, pus, and mucus, but were negative for amebae. All stool cultures were



negative for the typhoid-dysentery group. Hospital course for the first seven days was stormy, culminating in a chill with fever 106 degrees Fahrenheit. This was coexistent with severe abdominal pain and distension. On the ninth hospital day sulfathiazole was started. Medication was not satisfactory, due to nausea present before institution of drug. Stupor ensued. Temperature remained high. Death occurred on August 5. At autopsy there were general peritonitis and ulcerations and necrosis of the colon with many perforations in the sigmoid area.

#### COMMENT

In the series just reported, stool cultures were positive for the Flexner bacillus in six of the nineteen cases. In the remainder the cultures were negative. In a few of the cases the cultures were made by inoculating rectal swabs into the media at the bedside. This method has been advocated to obtain a higher percentage of positive cultures from bacillary dysentery stools, because an active bacteriophage is usually present in the stools in this disease. Microscopic examination for amebae were also made in each of the cases.

In the twelve patients with negative stools there was either substantial clinical evidence of the disease or there were relatives with the disease, and the inference was obvious. During the summer and fall of 1940, bacillary dysentery was present in Memphis and environs in epidemic proportions, particularly in certain localities in which most of these patients in this series resided. We did not make the diagnosis in absence of a positive stool culture unless the clinical symptoms and findings were incontrovertible. In this series patients with negative cultures all had the characteristic dysentery with frequent bloody stools containing pus and mucus, and painful straining the toxemia. In most of the patients constitutional symptoms were severe. Dehydration, fever, vomiting, and rapid pulse were the rule. All of the patients with negative cultures were acutely ill. A diagnosis of bacillary dysentery was not made in the presence of a moderate diarrhea of dubious source; sulfathiazole, however, was used

successfully to correct a few infectious diarrheas of uncertain origin.

The dosage of sulfathiazole employed in this series was routinely heavy. From two to four grams were given stat, then one gram every three or four hours thereafter. The drug was usually withdrawn after three to seven days, or after three or four symptom-free days, comparable with our policy in pneumonia. Larger doses were not found necessary, nor was parenteral therapy. The drug was withdrawn by mistake in two patients before the third symptom-free day, but in neither of these was there a recurrence. No toxic effects were noted in the entire series. Complete blood counts were done on all patients on admission, and on every other day thereafter. The other therapy employed was routine, general anti-diarrheal measures such as bismuth and paregoric, a low residue diet, fluids, etc. These measures were seldom found necessary after twenty-four hours of chemotherapy.

Blood sulfathiazole determinations were performed in sixteen of the nineteen cases. In many of these the blood determinations were frequent. The readings varied from a trace of sulfathiazole to 8.5 milligrams per cent. We were unable to correlate the effectiveness of the drug with the blood concentration. This also is comparable to our observations in pneumonia. We hope in the future to be able to determine whether there is an action of the drug against the mucosa from within the lumen. Though such action seems unlikely, this needs investigating. The few stool concentrations that were performed were not satisfactory enough to report.

In this series, improvement began in nearly all patients within a few hours after sulfathiazole was started. There was an immediate decrease in stools with less blood, pus, and mucus, the stools becoming better formed. Concurrent with this, tenesmus and cramping disappeared, fever subsided, the appetite returned, and a sense of well-being was restored. It was our impression that those who received the drug earliest responded most quickly.

Two patients in this series died. Both had peritonitis complicating bacillary dys-

entery, and in each the drug was started after the peritonitis had already developed. It would appear that in these two cases the disease was too far advanced to expect anything from therapy. Certainly peritonitis, regardless of type, is known to respond poorly to chemotherapy.

During 1940 there were fifteen cases of bacillary dysentery on the medical service at John Gaston not receiving sulfathiazole. Two of these died. In the remaining thirteen cases the courses were much stormier than in the thiazole treated ones, and when improvement did occur it was not abrupt or predictable as in the thiazole group. That a sudden, spontaneous remission may occur in bacillary dysentery we have seen demonstrated in previous years, but never have we observed this in a large consecutive series as here reported.

#### CONCLUSIONS

1. Sulfathiazole has been given to nineteen adult patients with bacillary dysentery at John Gaston Hospital.

2. Two of the patients died. In these peritonitis had developed previously to beginning thiazole therapy.

3. The remaining seventeen recovered with prompt response of symptoms, and cure of the disease following therapy.

4. In six of the nineteen the stool culture was positive for bacillus dysenteriae (Flexner).

5. It would appear that sulfathiazole is beneficial in the Flexner form of bacillary dysentery, and that further study of its effect in this and other forms of bacillary dysentery is indicated.

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#### DISCUSSION

DR. A. E. KELLER (Nashville): Before discussing the treatment of bacillary dysentery with sulfathiazole, I should like to call to the attention of the members of the Tennessee State Medical Association some facts regarding the problem of the dysenteric and diarrheal diseases as they exist in the state at the present time. In the last ten years, the number of reported cases of typhoid

fever has dropped from 1,732 in 1930 to 419 in 1939. In the case of bacillary dysentery, however, the number of cases reported each year has fluctuated greatly without any comparable decline. In 1939, 361 cases were reported. This is almost the same as the number of cases of typhoid fever reported for that year.

The importance of bacillary dysentery is again revealed in an analysis of the cases of bacillary dysentery reported from the Vanderbilt University Hospital during the past ten years. In that period, about five cases of bacillary dysentery for every one case of typhoid fever were treated, indicating that, in that institution, bacillary dysentery is seen about five times as frequently as typhoid fever. It is very likely that the reporting of bacillary dysentery in this state is not done nearly as well as the reporting of typhoid fever. Until recently the bacteriological methods for the diagnosis of bacillary dysentery has not been as satisfactory as the bacteriological methods for the diagnosis of typhoid fever. The failure to report bacillary dysentery as thoroughly as typhoid fever may be in part due to the hesitancy on the part of physicians to report a disease until the diagnosis has been established. It is unreasonable to think that in 1939 only 361 cases of bacillary dysentery occurred throughout the entire state of Tennessee. In that year, 121 cases of bacillary dysentery, or approximately thirty-three per cent of all the cases reported in the state, were seen and reported by the Vanderbilt University Hospital.

In studying the mortality rates for typhoid fever as compared with the reported mortality rates for dysentery and diarrhea and enteritis under two years of age, a condition which in most instances is an infectious process associated with bacteria of the dysentery group, it is found that for 1939 for the state as a whole the mortality rate for typhoid fever was 3.4 per 100,000, for bacillary dysentery it was 4.8 per 100,000, and for diarrhea and enteritis under two years of age it was 13.1 per 100,000. These data indicate that the problem of the infectious diseases of the intestinal tract other than typhoid fever represents a more important cause of death in this state than does typhoid fever. In the case of diarrhea and enteritis, the mortality rate in children under two years of age is four times as great as that of typhoid fever. I am presenting these figures in order to point out that in Tennessee we have not begun to do very much toward the control of dysentery and similar infectious diseases. Emphasis has been placed in the past entirely on the control of typhoid fever to the exclusion of these conditions.

In connection with the treatment of bacillary dysentery with sulfathiazole, only a few cases have been treated with this drug in the past months on the pediatric service of Vanderbilt University Hospital. Since very little information is available in the literature concerning the treatment of bacillary dysentery with the sulfonamide drugs, particularly sulfathiazole, I have analyzed nine



cases of bacillary dysentery, not complicated with other conditions, treated with sulfathiazole, and one case treated with sulfanilylguanidine.

These patients had been ill from two to ten days prior to admission to the hospital. In regard to the cases treated with sulfathiazole, most of the patients were under one year of age and most of them had mild to moderately severe dysentery. From all patients the Flexner dysentery bacillus was isolated from the stools. All patients received the same type of supportive treatment, namely, fluids and transfusions of serum and whole blood. In all patients the temperature dropped to normal within five days, and in most cases there was a marked drop in temperature within the first twenty-four to forty-eight hours. The drop in temperature was associated with definite improvement in the general condition of the patient. The number of stools per day decreased rapidly, and there was a tendency for the stools to return to normal condition by the end of five days. In two cases the number of stools did not decrease until after the fifth day of treatment. These patients received sulfathiazole for varying periods of time, the shortest period being two days and the longest ten days. The average length of stay in the hospital of these patients was thirteen days, the shortest being four days, and the longest twenty-two days. Recovery occurred in all of these patients.

One patient who had bacillary dysentery, in which case the Flexner dysentery organism was isolated, was treated with sulfanilylguanidine with essentially the same results as those obtained with sulfathiazole.

Two deaths occurred in patients treated with sulfathiazole. In one case the patient was very sick on admission. The patient was given the usual supportive treatment and in addition sulfathiazole was administered for four days. New-castle bacillus was isolated from the stool of this patient. The other patient who died had had a diarrhea for four weeks and was very ill when admitted to the hospital. An organism belonging to the *Salmonella* group was isolated from the stool. This patient died sixty hours after admission. Sulfathiazole was administered for only twenty-four hours. This particular patient was in extremely poor physical condition as a result of the prolonged infection.

For the past six or seven years there has been available improved media for the bacteriological examination of stool specimens for dysentery bacilli. Desoxycholate media with or without cit-

rate has been found particularly efficient for the culturing of the Flexner group of dysentery organisms. If Shiga organisms are suspected, McConkey's medium should be used. It has been the experience in the Pediatric Department of the Vanderbilt University Hospital that in a high percentage of children who enter the hospital with diarrhea, the process is an infectious one, probably associated with the dysentery group of bacteria. It has been possible in the past few years to culture the dysentery organisms from a high percentage of children who have either frank dysentery or diarrhea.

The results obtained in the treatment of bacillary dysentery with sulfathiazole in this small series of cases are encouraging, but it should be borne in mind that in this particular group of cases all of the patients had mild to moderately severe dysentery. Before an evaluation of its therapeutic efficiency can be made or any conclusion drawn regarding its effectiveness, more experience will be necessary, and observations should be made to cover all degrees of severity of the infection. Observations should also be made as to the effectiveness of this drug in bacillary dysentery resulting from the various strains of dysentery bacilli. Available literature indicates that in the case of the Flexner organism sulfanilylguanidine seems to be efficient in the control of the disease. Where possible, stool cultures should be made and accurate data kept as to this point.

In concluding these remarks, I should like to state that sulfathiazole and sulfanilylguanidine represent the first two chemotherapeutic agents which seem to be beneficial in the treatment of dysentery. Up to this time there has been no drug or agent which would give results comparable to those obtained with these two sulfonamide derivatives. In the future, if drugs of this nature may be shown to have the same effect on the enteric infections of the dysenteric group as they have on meningococci, streptococci and pneumococci, physicians will have an important means of treatment of this group of diseases. The problem of bacillary dysentery is great enough in this state to warrant careful consideration on the part of the medical profession and public health administrators to develop a program for its control. If in the future these drugs prove to be effective agents for treatment of dysentery, I do not think it out of place to suggest that the distribution of specific drugs for the treatment of bacillary dysentery be put on the same basis as the distribution of the same drugs for the treatment of pneumonia.



## THE PHYSICIANS IN THE NATIONAL DEFENSE\*

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I esteem it a great privilege that I am permitted to be with you upon this occasion. Almost thirty-six years ago I left this, my native state, to enter the military service, or, in the vernacular of Kipling's Tommy Atkins, "to accept the widow's shilling." Consequently, it is very gratifying to me that at this period of such grave national and international importance I can discuss with you the work of the physician in the national defense.

Will you permit me to refer briefly to the work of three outstanding men who contributed so greatly to military medicine — namely, Ambroise Paré, Dominique Jean Larrey, and Jonathan Letterman? In the opinion of Garrison, Paré was the greatest of military surgeons through his ability, his large humanity, and his insight into the problem of the military surgeon. In him we see for the first time a medical vassal of a great captain going out of his way to succor the ordinary wounded soldier. Early in his career in 1536 he had seen an old sergeant, upon being assured that three wounded men could not recover, cut their throats "gently and without malice" to put them out of their misery. That episode appears to have affected him profoundly. In the brutal and bloody period in which he lived, one in which people were less sensitive about murder and adultery than about differences in religious belief, the humane figure of Paré towers above his time and environment. Although it is a far cry from 1536 to 1941, American physicians who have always rallied humanely, generously, and patriotically to the assistance of the sick and wounded soldier may still acknowledge the humanity and the greatness of the early leader in military surgery.

But the greatest and most efficient physicians and surgeons are unable to practice their healing art satisfactorily unless the maimed and broken men in the sad backwash from the battle front are collected and

transported to suitable locations and shelter. Therein lies the art of the medical officer, of whom Larrey and Letterman were two of the greatest.

It was of his great surgeon and medical officer, Larrey, that Napoleon said, "He is the most virtuous man that I have ever known," meaning by virtue—honesty, integrity, unselfishness, humaneness, and nobility of character. During the more than two centuries that had elapsed since the period of Paré, statesmen and military leaders had become more conscious of their responsibility for the care of the sick and wounded soldiers. Physicians and surgeons were available for the care of the wounded upon the field of battle, and hospitals were established in the rear areas often many miles behind the battle lines. There was no provision, however, for the orderly collection of the wounded and their evacuation from the battle area. The only transport available was a few empty wagons from the inadequate wagon trains.

Larrey's greatest contribution to military medicine was his organization of ambulance trains and mobile hospitals to be located in the vicinity of the battle. He later, following the example of Percy, organized squads of litter bearers to collect the wounded and convey them to locations to which ambulances could advance with relative safety.

Following the downfall of Napoleon there was little advance in military medicine until Jonathan Letterman appeared upon the scene in our Civil War. In the meanwhile, from the sad debacle of the medical service in the Crimean War, came the organization of army nursing by Florence Nightingale, and from that on the bloody field of Salferino, the work of Henry Dunant in the organization of the Red Cross, both great advances.

Let me remind you that the convention of the Red Cross is primarily to provide for the neutrality of the army medical personnel and the Red Cross emblem to mark such personnel and its material. The civilian branch of the Red Cross is authorized

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primarily to provide such assistance as may be required by the army medical service. It is interesting to note in passing that the United States that ratified the convention in 1881 was the last of the fourteen signatory nations to do so. It required a tremendous seventeen-year national effort, assisted by the President of the United States, to secure its ratification. There were isolationists in those days.

Appreciating the unsatisfactory development of military medicine in Europe prior to the beginning of our Civil War, we can understand why our medical service was unprepared for the conflict. Our small army, with its inadequate medical service, had been scattered throughout the country, with no opportunity to make preparation or plans for such service. During and after both the first and second battle of Bull Run, there was a complete breakdown of the medical service. Although there were regimental surgeons with some ambulances, there was no organization for the orderly collection and evacuation of the wounded. After both conflicts, wounded men lay on the battlefield unattended for a number of days. It was during that period after the second battle of Bull Run that Surgeon General Hammond addressed a memorandum to Secretary of War Stanton recommending the organization of an ambulance service. Secretary Stanton, upon the advice of his chief of staff, General Halleck, returned the memorandum disapproved.

Fortunately, just at that time Jonathan Letterman was appointed chief surgeon of the Army of the Potomac, then on the Peninsula. Letterman was an able administrator and a man of great vision. He formulated a comprehensive plan for the collection of wounded by squads of litter bearers, for ambulance companies, and for mobile field hospitals. His plan was submitted to General McClellan, also a capable administrator, who approved it immediately. Although Letterman had not had sufficient time to collect all of the ambulances required and to perfect his organization before the battle of Antietam, his organization functioned so satisfactorily that every one of the 10,000 Union soldiers wounded

on that bloodiest day in American history were collected and in a field hospital within twenty-four hours.

Although Letterman's plan had been disapproved by Secretary Stanton, it was soon adopted by General Grant, then in this section. Ultimately, even the Secretary of War and his advisor, General Halleck, were forced to approve it and to authorize its use by all of the Union armies. Letterman's plan became a pattern for all armies.

All those who are interested in the prompt and humane treatment of wounded soldiers must honor the names of Paré, Larrey, and Letterman. Modern military medicine owes much to them.

We must pass rapidly to the period of our participation in the World War. Our medical corps expanded from 900 to 31,000. Ninety-six per cent were physicians from civil life who generously and at great personal sacrifice volunteered their services. The results of your work were splendid. Had it not been for the world-wide pandemic of influenza that caused 500,000 deaths in the registration area of the United States, the death rate of the army would have reached an all-time low point. Also, notwithstanding the much greater percentage of dangerous and extensive wounds from artillery missiles, the fatality rate of all gunshot wounds was forty per cent lower than during the Civil War.

You are interested chiefly, no doubt, in the work that is required of the physician during this present emergency. It occurs to me that if in our imagination we can view an area where our troops are engaged in a great battle for the defense of all that America stands for, we may visualize the medical service as it is planned.

Let us assume that we are flying over such an area, and that we are able to view all the details not only of the immediate battle front, but of the large zone in the rear, stretching back many miles, filled with troops, all busily engaged in activities to support those in the front line. We would note that every regiment and smaller organization has with it doctors, dentists, and medical department soldiers. These medical groups that we call detachments have medical equipment for first-aid treatment,



splinting of fractures, material for the preparation of hot stimulating drinks, blankets, litters, articles for combating shock, and such other items as may be used in the emergency treatment in the front area.

The ambulances, all of which can travel across country, together with the equipment for field hospitals, and for the advanced collecting stations, are grouped with the necessary doctors, dentists, and medical soldiers in medical regiments or battalions. There is a medical regiment for each national guard division, and a battalion for each smaller streamlined regular army division, each under the control of a division surgeon.

As an infantry regiment deploys, we see two medical soldiers with each company and a group of doctors and medical soldiers to the rear of each infantry battalion. As the regiment stabilizes for the attack, the battalion section having selected a location about four hundred yards behind the front line that is partially concealed along a stream, in a wooded area, or elsewhere, hastily add further concealment and prepare the aid station for work. In the meanwhile the medical soldiers with the companies are applying first aid to wounded men, splinting fractures, controlling hemorrhage, etc. The litter bearers advance, using concealed routes as much as possible. They collect on litters the wounded that are unable to walk and return to the aid station. Those who are able to walk are directed to follow.

In the meanwhile a collecting company from the medical regiment has advanced to a position about 800 to 1,000 yards back of the aid stations, to which a single ambulance can advance with some safety. From that location litter bearers advance to the aid station to litter the wounded that cannot walk from there to the collecting station. The walking ones painfully follow. At the collecting station further emergency work is done.

The divisional ambulances, approaching the collecting station singly so as to avoid observation, convey the wounded to the field hospital, about eight miles to the rear or just beyond the range of light artillery.

Here there is further and more elaborate emergency treatment, with some emergency surgery under selected conditions. Surgical hospitals may be established for more elaborate treatment.

Army ambulances from the rear area advance to these field hospitals to transport the sick and wounded to the evacuation hospitals.

The work of the collection and evacuation of the wounded from the front line to the evacuation hospital is very difficult and dangerous. Much of it must be done at night with unlighted ambulances and without lanterns. The roads are always congested with supplies and personnel going to the front, thus making more difficult the journey to the rear of helpless and suffering men.

Twenty-five or thirty miles to the rear of the field hospitals are the evacuation hospitals, with doctors organized into surgical, splint, shock, and other teams, with dentists, nurses, and medical soldiers. This is a large hospital, with cots for seven hundred fifty patients and operating tables for four surgical teams. It is housed in tents, and located on a railroad, by which the patients are transferred to general hospitals further to the rear.

Near the evacuation hospitals we may note the so-called surgical hospitals. Each one has cots for four hundred patients, with operating equipment for four surgical teams. In some instances that equipment, with the necessary X-ray and sterilizing equipment, is mounted in large vans or busses; in others it is transported in trucks and installed in tents. The van or bus type may be especially useful in situations where rapid movement is required, as in support of a mechanized division in repelling parachute attacks.

Following back along the railroad, in some instances many miles, we will find fully-equipped general hospitals installed in buildings, each with a staff of fifty-eight doctors, seven dentists, eight administrative assistants, one hundred twenty nurses, five hundred medical soldiers, and several technicians. These hospitals have accommodations for one thousand patients. Ten

or more may be grouped in one locality as a hospital center.

Throughout this large area we will note very large general supply depots that forward the enormous quantity of medical supplies required for the smaller medical depots scattered throughout the advanced area. We will observe in the rear areas many training and rest camps, each with a station hospital of the size required. There are also many laboratories, convalescent hospitals, army and corps medical regiments and battalions, groups of coordinating medical officers, sanitarians, etc.

I have discussed at some length our work in the battle area so that those of you who have not had that sad experience may appreciate to some extent the magnitude of the work of the medical department. From this you may realize that our personnel should be thoroughly trained, if this work is to be done effectively. Possibly you may be able to explain to some young physician who considers that it is a hardship and waste of his time to serve with a detachment or a medical field unit the importance of such training. He should be not only a well-qualified doctor, able to do skillfully any professional emergency work required, but should know military organization and tactics that he may coordinate his work in the always complicated and often rapidly-moving military machine. In addition, he should be able to follow a route on a military map or an aerial photograph, for there are no signposts on a battlefield.

But what are we doing now during this training period? First, you know of the physical examination by the physicians on local boards and the army induction boards. To be a good and efficient soldier, one must be physically fit. He who is not becomes a burden in a war area and adds to the work of the medical department. It requires one well man to care for one sick one. War is indeed an arduous game. No doubt you have heard of many "foolish decisions" by our boards. Probably some selectees have been improperly found physically disqualified. They may have suffered some inconvenience. All should appreciate, however, that some individuals

must suffer some inconvenience in this "all-out effort."

During the past several months we have been much concerned that adequate medical service might be lacking for some sick soldiers. But all our medical officers, both regular and reserves, have worked hard, and adequate service has been available in all military camps. In many instances, however, it has been in improvised hospitals, with supplies hastily assembled and with inadequate personnel.

Now that our hospitals at camps are nearing completion, medical supplies being rapidly distributed, and adequate personnel is becoming available, you will find excellent medical service at every station.

At every camp there is a well-equipped and staffed hospital, with beds for four per cent of the command, or 1,000 beds for 25,000 men. In addition, there will be beds for one per cent of the commands in centrally-located general hospitals, each with 1,000 beds.

Please do not infer from the number of beds that are being provided that we expect to have an unhealthy group of young men in our camps. We do not. We know that the health of our army will be second to none. But even the trivial sick are treated in hospitals, for there are no wives, mothers, or sisters to care for them in their barrack homes. Every precaution is being taken to protect their health, both while in camp and when on pass. In January, 1939, we concluded an agreement with the United States Public Health Service to coordinate their efforts with those of state and local health officers to insure adequate health measures in areas adjacent to camps. A Public Health officer is in the office of each corps area surgeon to insure prompt coordination in such matters.

May I add a few words in regard to the attitude of the War Department with reference to any attempted regulation of prostitution? The Secretary of War, the Chief of Staff, and the Surgeon General are all unalterably opposed to any such attempt. In our opinion, any effort to prevent venereal diseases by the examination of a few unfortunate prostitutes is not only morally wrong, but totally ineffective as a public



health measure. You might just as well attempt to purify a polluted water for public consumption by straining it through cheesecloth.

We may note in passing that in a major military operation in a battle area we require from ten per cent to fifteen per cent of hospital beds, depending upon the severity and duration of the fighting, and not including those in mobile hospitals such as evacuation and surgical. When the armistice was signed in 1918, ten per cent of total A. E. F. were patients in hospitals.

Also you will find dispensaries and dental clinics in the troop area. The men in the army will have the best possible medical and dental service. In addition, there are medical detachments, medical regiments, and battalions in training. Also there are the training *nuclei* of the evacuation, general, surgical, and station hospitals for the battle area, each with a few officers and fifty per cent of the required medical soldiers. The physicians, dentists, and nurses will be furnished by medical schools and hospitals that are sponsoring such units. The supplies will be packed and ready when required.

In so far as possible, all younger officers will receive one month's training in field service work at our school at Carlisle, Pa., or a similar period of professional training in one of our general hospitals. Many of our older officers, including those in sponsored units, will be given, upon application, administrative training in our general hospitals for a period of not exceeding one month. On the recommendation of the Surgeon General, the War Department has directed that in so far as practicable, upon the application of the officer, each one may serve six months in a hospital and six months with a medical detachment or a unit.

A school for officer candidates will be inaugurated on August 1 at Carlisle. Selected inducted men with a college education will be offered an opportunity to qualify after three months' training for commissions in the Medical Administrative Corps. We hope to graduate four hundred to six hundred a year to replace doctors in certain administrative positions, both in hospitals and field units.

The procurement of personnel has been a difficult problem. We are making every effort to protect the interests of the profession. Reserve officers are being called to duty with as little disturbance of their civilian commitments as possible. We are offering commissions to all doctors of draft age, including those at time of graduation. All who are commissioned at time of graduation will be allowed eighteen months in which to complete a one year's internship before being called to active service. We have authority to accept, with advanced rank, older men whose services are required as chiefs of service, provided reserve officers are not available. We do not accept graduates of substandard schools, osteopaths, chiropractors, naturopaths, chiroprodists, etc.

There are now on active duty approximately 1,200 regulars, 600 national guard, 5,000 reserves—a total of almost 7,000 physicians. For the army of 1,400,000 we require 9,500. Medical service must be provided not only in the United States, but in Alaska, Philippine Islands, Hawaii, Panama, Puerto Rico, and for the troops that are to garrison the bases acquired from Great Britain. By August 27, 1942, or two years from the passage of the resolution calling reserves to active duty, our reserve corps will be exhausted, and it will be difficult to procure replacements for those who do not elect to continue on duty a second year. Five hundred reserve officers volunteered for active duty prior to the passage of the resolution.

Can American medicine meet the demand for qualified physicians? It not only can, but will, do so, and do so voluntarily. You know of the great assistance that is being given to us by your state and local society under the leadership of the Committee on Medical Preparedness of the American Medical Association. You appreciate the importance of this cooperation. Not only is it necessary to have sufficient physicians for the army, navy, United States public health and state health organizations, but also for practice in each community, for hospitals and medical schools.

We also realize that this will require co-operation and coordination. Who shall go and who shall remain? Both are equally important. What will happen to the positions and practices of those who go? We hope that these problems can be solved. The response of the profession has been splendid. In certain instances, however, there has been a natural tendency to hold back. It is difficult for our profession to appreciate the vital importance of the defense program. If war should be declared, a patriotic wave would sweep over this country, and physicians, forgetting all else, would, as heretofore, volunteer in large numbers. In the meanwhile if our army is to meet a well-organized and trained one, it also must be organized and trained.

I have attempted to show you that our mission includes not only the care of the sick, but adequate training for our arduous work in the battle area. For this program it may be necessary that the interest of the individual be subordinated to that of the national defense. In the words of our President, this is an "all-out effort." Nothing else will succeed. Mr. Chamberlain thought that "business could go on as usual," and he brought the British nation to the very brink of ruin. Will we follow the leadership of our Commander in Chief in the White House? He has told us of the gravity of the situation and the necessity for a united effort. Our country is spending huge sums of money in the fight for democ-

racy. But this national defense program cannot succeed without a united effort by our profession. On that October morning in 1805, when the armies of Napoleon were triumphant on the continent of Europe, when the fate of the British nation depended upon the supremacy of its fleet over the combined ones of France and Spain, the words that Lord Nelson threw out on the morning breeze at Trafalgar must have thrilled the heart of every English sailor and aroused in each one the determination to conquer or die: "England expects every man to do his duty." It is not necessary for me to say to you: America expects every physician to do his duty.

Each one, with the assistance of his medical society, must decide what his duty is, whether to continue in his civilian practice, in his teaching position, in a public health capacity, or to offer his services to the army or navy. Those of you who may be called or elect to join the colors will do so at great personal and financial sacrifice. This sacrifice, however, will not be without recompense. As the years pass, the knowledge that you did your part in the fight for the rights and freedom of your brother man will bring much satisfaction to you. And to each of you may I extend the wish that, after a long and successful career, in the sunset of your life you may cherish in your memory the sense of duty well done in this critical period of our nation's history.



## REMARKS\*

FRANK H. LAHEY, M.D., Boston, Massachusetts

In these times, particularly when plans and practices which have been established for years, and up to the present satisfactory, are being criticized, among which is included medicine, an attitude of complacency and satisfaction is not permissible. Neither is it permissible in such times as these for a profession with a past as honorable and worthy as is that of medicine to attempt to discuss these criticisms in terms of whether or not such criticisms should exist. Criticisms must always, and will always, exist. It is my opinion that they are not best met by being irritated by their existence, by statements which can be misinterpreted as boastful as to what medicine has accomplished, by statements comparing medicine in this country with medicine in other countries, but rather by perhaps more basic explanations of why doctors are so jealous of medicine's reputation and the motive which prompts them to try to retain the methods of practice with which they and the world in general have been so successful, and which have proven so satisfactory over so many years.

Criticisms of medicine today, either by those within medicine or by those outside of medicine, tend to at least suggest that medicine is reluctant to accept new and novel plans because it is fearful that it will lose something in the way of financial returns, something in the way of prideful prestige, or something in the way of dictatorial control.

It is extremely important to impress upon every lay audience that those of us who are anxious that changes in medicine be conservative and not radical are prompted to this position by no such purposes as are spoken of above. It is important to convey to the laity that everyone in organized medicine wishes to be certain that nothing is hastily done which will in any way change the quality of medicine, that any fears expressed concerning some of the newer proposals in medicine are not related to any

selfish interest, to losing control of medicine, to obtaining less income, but rather related to fears lest these plans lower the standards and quality of medicine.

Organized medicine feels that experiments can be tried in government and in business with less danger than in medicine. If they prove wrong in these fields, the damage is really not serious, resulting only in inconvenience and in loss of money, both reparable. Organized medicine fears experiments in medicine of a radical nature lest they result in more serious, more irreparable damage. Should undesirable effects from radical changes occur, they may well be recognized so late that by that time damages which cannot be repaired have already resulted. Organized medicine is anxious that the changes in medicine continue to be of an evolutionary character, carefully thought out, slowly and patiently accomplished, as has been the case in past years, so that small disadvantages can be recognized early and met before larger ones appear. A fact which I have tried to convey to every lay audience to which I have talked throughout the United States is an important one for every doctor to consider his duty to present to the lay public, and that is that competition in medicine, as has been stated by the American Medical Association, is never price competition. It is always solely quality competition. The desire of organized medicine and every right-thinking doctor in the United States is to retain this outstanding quality feature of medicine. If organized medicine disagrees at times with what seems to them occasionally radical changes in medicine, it is because the principle that the competition in medicine is always for quality and never for price has been the one which has brought medicine in the United States where it is today, a position which no one can deny is at a level higher than that of medicine anywhere else in the world.

It has at times been stated that organized medicine opposes plans whereby individuals can lighten the burden of medical

\*Read before the Tennessee State Medical Association, Nashville, April 8, 1941.

care by a type of medical insurance. Everyone is familiar with the difficulties which a great many people with moderate incomes have in meeting medical expenses. Everyone is certainly favorable to any insurance plan which will lessen this burden. Organized medicine and the majority of doctors in no way object to this plan. They ask only that it contain those features which will if anything make the plan more desirable for the insured, and also retain principles which are basic in a free country. The outstanding one is a free choice of doctors. The majority of doctors fear limitation of the free choice of doctors, because they fear the placing of the decision as to who is a good doctor in the hands of any bureaucratic agency. This takes us on indefinitely to who is to decide who is a good doctor, which could be carried on *ad infinitum*. To a free choice of doctors a majority of physicians would add that any insurance scheme should be under the supervision of

the State Commissioner of Insurance in order that it may conform to the sound financial needs of any insuring company; and, in addition, there should be some reasonable upper limit of income for those to whom the plan is available.

If these conditions, which seem sound and reasonable, are met, as they are by the recent enabling act submitted to the Massachusetts State Legislature and supported by the Massachusetts Medical Society, there would be no criticism of any insuring group.

None of the above statements is meant to be contentious. Everyone in medicine, it seems to me, should retain tolerant consideration to opposing views with which they may not concur. If there ever has been a time in history when discord is undesirable and united effort urgently needed, almost everyone would agree it is the present, and it promises to be even more increasingly necessary in the immediate future.



## PRESIDENT'S ADDRESS—PEDIATRIC EMERGENCIES\*

K. M. BUCK, M.D., Memphis

A presidential address, like an after-dinner speech, is something we put up with and tolerate because custom demands us to do so. I was hoping that this year our able secretary would be so busy dodging the draft that he would overlook this year's address, and you fellows would be spared fifteen minutes or so of intensive seat squirming. But in this society, as in most, the secretary's word is law. He even picks out the hotel where we meet, as well as what we hear and what we eat.

This paper was not written from a scientific viewpoint. It just affords me an excuse to get certain things off my chest.

It has been truly said that the pediatrician is just a general practitioner with an age limit. This would not be so bad if we could always do things, when and where, we wanted to. But this cannot be, for the practice of pediatrics is crowded to the brim with emergencies and so-called emergencies. I know of no other field of medicine where emergencies play so prominent a part. They bring in increased revenue, it is true, but they also disturb your sleep, your meals, spoil picture shows, break up golf games, take you from a bridge party, and play the devil with your office hours. Yet if you refuse to make these calls, you will probably lose a good patient.

Most every sick child is an emergency to the parents, and the call usually is to hurry. Quite often, a 3:00 A.M. hurry call will be one to see a baby that has been sick three or four days. To my mind, this is no emergency, especially if it is cold and raining.

Quite often we streak across town on an emergency, to find on arrival that we are about the sixth doctor to arrive. All you can do is send a bill which usually isn't paid.

A chap gave me a very urgent call, some nights ago, to see a child in one of the suburbs of Memphis. On arrival, I found the family doctor had arrived before me.

The father apologized very much for disturbing my sleep. I informed him, however, he owed me five dollars for the call. He went in and borrowed it from the other physician.

Since I started on this paper, I have received two hurry calls. One was to see a baby that had suddenly stopped breathing and turned blue. On arrival the child had completely recovered. He had vomited and gotten some of the vomitus in his larynx. The other was to see a baby with severe cramps. This patient also was O. K. when I arrived.

One thing that scares parents out of their wits is "spasms." A call to an infant or child with convulsions is a very common occurrence to the pediatrician. On such a case, you can hardly leave until the patient is quiet again. Quite often such a call will consume the greater part of a day or night. You might as well be doing obstetrics. If such a case does not respond to the ordinary procedure usually employed, he should be hospitalized. I was recently called to see a six-months-old baby with convulsions. This baby appeared so sick that he was sent to the hospital at once. On arrival at the hospital, a spinal puncture was done and a diagnosis of pneumococcus meningitis confirmed.

Acute abdominal pain in a youngster should be considered an emergency until appendicitis, intussusception, and obstruction are confirmed or eliminated.

Catarrhal croup, occurring usually in the early morning hour, is responsible for a number of our untimely hurry calls.

Accidents are responsible for a great number of emergency calls. These include cuts, lacerations, fractures, burns, and poisoning. A majority of these cases can be handled better at the office or, if very serious, at the hospital. As a rule, a call to the house first is required, unless you are a pretty good talker.

I see no reason why a pediatrician cannot take care of most of these emergencies himself. Lye poisoning and compound frac-

\*Presidential address read before the Tennessee State Pediatric Society, Nashville, April 8, 1941.

tures are two that I am glad to turn over, however.

If one is so busy with feeding cases and toxoid shots that he has no time for these things, he establishes himself as a clearing-house for his grateful doctor friends. In which case, he not only deprives himself of any worth-while fee, but loses contact with his patient as well.

To my way of thinking, emergencies comprise quite an important part of pediatric practice. A pediatrician really has to be a "Jack-of-all-trades." If he can take a stitch or two, set a simple fracture, dress a burn, wash out a stomach, or do an intubation as well as the other fellow—why not?

It would be impossible to enumerate all emergencies that fall to the lot of the pediatrician. Some of which are serious, while others are only scares. They range all the way from falling out of bed to diabetic shock. The fact that most anything can happen, and at any time, makes the prac-

tice of pediatrics a day-and-night proposition.

If we can take care of sixty or seventy per cent of our emergency calls, we are not doing so bad. In order to handle 100 per cent of our emergencies the following rules are suggested:

1. Have two men and a boy on your telephone at all times.
2. Equip your car with a police radio so you can be reached between calls.
3. Stay home nights.
4. Don't play golf.
5. Refuse to attend church.
6. Keep away from picture shows.
7. Never stay in the "jonnie" longer than three minutes.
8. Pass up all medical meetings, vacations, and out-of-town trips.

If you will follow these simple rules, your practice will grow by leaps and bounds, but, "alas!" you will succumb to an early grave, and may your soul rest in peace.



# ALLERGY AND ITS RELATION TO SINUSITIS\*

C. H. GLOVER, M.D., Memphis

The primary purpose of this paper is to offer food for thought and to refresh your memory in regard to allergy and its relation to sinus disease.

While allergy was first mentioned as catarrh in the sixteenth century it was not until the twentieth century that the true term was coined. Comparatively little has been written on this subject and the available information is somewhat scarce. It was in 1930 that Vaughan wrote his first book and in 1934 wrote his second edition.

It is most important that this condition be recognized in its early stage in order that the process may be arrested before an inevitable infection and degenerative changes occur.

There are certain tissues of the body known as shock tissues, these may be the skin, mucous membrane, liver, or even the reproductive organs, but only those tissues which vitally concern us will be considered. The primary edema of the nasal mucosa which occurs as a pathologic change may easily be observed on rhinoscopic examination. This is usually accompanied by itching and sneezing with watery discharge followed by a characteristic pallor which usually becomes more apparent when the condition of edema is of long standing.

The mucous membrane of the nose and sinuses is of the ciliated epithelial type and it is natural to suppose that the same relative pathological changes exist in both the nose and the paranasal sinuses. These changes may be temporary or of a permanent nature, depending on the histologic structure and predisposition to involvement of the affected tissues. If this process is not arrested in a short period of time, degenerative changes usually occur in the nasal cavities as well as in the paranasal sinuses — viz., polypoid formations and chronic edematous thickening of the lining mucosa, which may vary according to the agents which influence these conditions and

predisposition of tissue to involvement. This, however, is not always the case, there may be marked edema of the mucous membrane of the nose with very little or none of that of the mucosa of the paranasal sinuses and vice versa. During acute exacerbations the membrane may be thickened to a point of filling the entire cavity of any or all the sinuses, this is particularly true if the process is of long duration. In the instance of hay-fever pollinosis, this condition will usually disappear spontaneously in a very short time after the air is free of the affecting agent, this is true provided there is no mechanical blocking of the sinuses such as deflected septum, chronic edematous thickening of the lining mucosa, and polypoid formations in the middle meatus preventing proper drainage.

With a few exceptions it is fairly easy to determine if allergy plays a part in the symptomatology, positive skin reactions, edema, polypoid formations, eosinophiles present in nasal secretions, blood eosinophilia, pallor, obstruction with sneezing and itching, personal and family history. These may not all be present in every case of allergic sinusitis but in the great majority they are constant. The absence of a positive history and skin reactions does not necessarily eliminate an allergic condition, but in the presence of positive skin reactions one may feel fairly well assured that he is dealing with an allergy that is playing an important role as a causative factor in sinus disease.

Hansel states that hyperplastic ethmoiditis, chronic edema, and polyposis of the sinuses should always be considered allergic until proved otherwise.

Pollen sensitivity is usually due to wind-borne pollen but this is not always true as some of the heavier pollens carried short distances by heavy winds, and not considered wind borne, may be the causative factor in hay fever as well as asthma. Pollens from such flowers as rose, chrysanthemum, goldenrod, daisy, white clover, and many others, considered by some authorities to

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\*Read before the Academy of Ophthalmology and Otolaryngology, Nashville, April 8, 1941.

be harmless and purely insect borne, are known to be irritative agents and in many instances responsible for hay fever and asthma attacks.

We are all aware of the fact that chronic edematous thickening of the nose and the lining membrane of the paranasal sinuses produces prolapse and resultant polypoid formation.

Edema of such a severe nature impairs the action of the cilia which invariably leads to a secondary infection and alteration of the symptoms, and from observation and information obtained from literature on the subject I am of the opinion that sooner or later all of these cases become infected with bacteria common to the upper air passages, and the mere fact that one has a bacterial infection and empyema of the paranasal sinuses should in no sense rule out an allergy. Bacterial allergy is not entirely understood but by some authorities it is believed to be an etiologic factor of great importance in asthma, sinus disease, and the common cold. Kern, Schenk, Baldwin, and many others have carried on extensive work in this regard and have arrived at this conclusion.

In allergic sinusitis with bacterial invasion and empyema one should not depend on allergic treatment alone. Immunization therapy without the proper care of the infection might be carried on over a long period of time without improvement of symptoms, when if treated properly and conservatively as an infection, even though immunization therapy to the affecting allergin is not instituted, the patient will oftentimes be relieved of the symptoms. However, to prevent a return of the infection, both allergy and infection should be cared for individually.

Among those patients who have acute exacerbations of acute rhinitis with or without occlusion of the nares associated with sneezing, itching, and watery discharge, with or without empyema of the sinuses, one will find a high percentage of these cases to have one or more allergins as an etiologic factor; particularly is this true if the symptoms persist over a longer period of time than the ordinary cold not

affected by allergins. At least, this type of patient should be looked upon with a great deal of suspicion and not taken for granted that the primary condition is of an infectious nature. Although the nasal manifestations of allergy are not all clear-cut, a thorough investigation of the symptoms along with a complete history will usually lead one to the proper diagnosis and care of the patient.

Edema and polypoid degeneration of the lining mucosa are great factors in the production of empyema, in either case drainage is impaired and stagnation and infection of the secretions is inevitable.

The lack of information of the allergic side of sinus disease is probably responsible for a great number of poor results in surgical procedure. One patient has learned from the other that one operation is followed by another and another to an unending eventuality. Sinus disease having its origin in food sensitivity, a regulated diet with the proper caloric value, omitting the foods to which the patient is allergic, is a very important item, the patient being checked from time to time to determine the results being obtained, adding to or taking from the diet such foods as the case demands.

It is my firm belief that due to shock and constant irritation to which tissues are subjected by the intake of food unsuited to the individual along with other allergins, sometime in the not too distant future, in this day of modern research, malignancies will be found to originate.

Mr. F. C. D., weight 131 pounds, height five feet eleven inches. Examined December 31, 1939. Family history negative.

Past history: first noticed that he had urticaria when a child of five years of age which has continued throughout his life. He was treated for three months in 1925 for sinusitis and has had very light asthmatic attacks for a number of years.

Present history: first noticed swelling of the face which appeared in the early part of 1939 as a small nodule and occurring in from one to three months. This gradually increased in severity and frequency to a

point of closing his eye every seven to ten days.

There was considerable gas formation in left lower abdomen associated with an almost constant discomfort and was diagnosed as diverticulitis.

Allergy tests were given March 1, 1940, and found him to be allergic to many foods, pollens, and miscellaneous allergins. An outlined balanced diet was prescribed, based

on 3,300 calories for the day, omitting the foods to which he was allergic.

His maxillary sinuses were treated by lavage for a short time when they became clear of pus.

Desensitization to allergic pollens was carried out and the patient has been free of swelling and sinus infection except a few times when he partook of some of the forbidden foods—and has gained twenty-one pounds in weight.



# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of  
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### MEDICAL RELIEF

The following editorial is taken from the *New York State Journal of Medicine*. It is reproduced here for several reasons. In the first place, it is evident that great thought was given to the statement. In the second place, it shows that no single scheme or plan can apply to the conditions of one single state, much less the nation as a whole. It shows also that further study and experimentation is necessary before anyone can say that *this is a workable plan in a given situation*:

"The joint statement on medical relief in the state of New York, published in the March 15, 1941, issue of the *Journal* over the signatures of Jackson Davis, M.D., chief medical officer of the State Department of Social Welfare, and Christopher Wood, M.D., chairman of the Subcommittee on

Medical Relief of the Medical Society of the State of New York, is a most promising and refreshing contribution, clear, concise, and cogent, to the hitherto murky annals of indigent medical service.

"Let no one think that this statement is a joint inspiration. It is the result of a long conflict of many minds, the product of many weary hours of patient conference, argument, research on both sides. And the work is by no means finished. While it may be said that the State Department of Social Welfare 'is not unsympathetic toward these principles,' it feels 'that much additional thought and study are necessary, especially with reference to local conditions, before a common ground can be reached.' The principles referred to concern the disapproval of contract practice and the exploitation of clinics in the care of the indigent. On all other matters, there seems to be a fair degree of agreement on the part of all concerned.

"We should like to see the medical care of the indigent in this state put upon as rational and intelligent a foundation as the care of injured workmen now is. It cannot be done in a moment. The Workmen's Compensation Law and practice under it took many years and much revision to reach its present state of development. As the joint statement points out: 'Any platform adopted by the State Medical Society, or by local medical groups, has no force whatever in effecting [?] the conduct of medical relief work unless agreement can be reached with the state and local departments of welfare concerning this platform. . . . Such agreements, if reached, are essentially mutual understandings and in no sense abrogate any portion of the Public Welfare Law.' And yet, experiment in certain localities by agreement between the local welfare departments and the local medical profession is to be urged as of the utmost value. How otherwise is factual and clinical experience to be gained? What may work well in one experimental area may not work well at all in another. To know with certainty, experiment is essential. On the basis of data thus accumulated, and probably not before, reasonable changes

(Continued on page 194)



DR. HIRAM A. LAWS, JR.  
*President, Tennessee State Medical Association*

## *Our New President*

OUR NEW PRESIDENT, DR. HIRAM A. LAWS, JR., was born at Thompsons Station, Williamson County, Tennessee. He spent his early life on a farm. His father was Dr. Hiram A. Laws, a prominent doctor of Middle Tennessee.

He attended the public schools of Williamson County, also Branham and Hughes Preparatory School at Spring Hill, Tennessee. After finishing there he entered the Medical University of Nashville, Nashville, Tennessee, which later consolidated with the University of Tennessee and became the University of Tennessee, Medical Department. He graduated from there in 1909.

In 1909 and 1910, he served an internship at St. Thomas Hospital, Nashville, Tennessee. After completing his internship he practiced medicine at Lynchburg, Tennessee, county seat of Moore County, for seven years.

He volunteered his services to the Army soon after war was declared in 1917 and was commissioned a first lieutenant in the Medical Corps. He was assigned to duty with the Ninety-Sixth Division. After being discharged from the Army in 1918 he took postgraduate work at Bellevue and Harlan Hospitals, New York City, and also at the New York Polyclinic.

Doctor Laws began general practice in Chattanooga in 1919. Soon after beginning his practice he associated himself intimately with the activities of organized medicine, becoming a member of the Chattanooga and Hamilton County Medical Society, the Tennessee State Medical Association, the American Medical Association, the Southern Medical Association, and a fellow of the American College of Surgeons. In 1920 he was placed on the surgical staff of Erlanger Hospital, Chattanooga, Tennessee. He served as chief of staff of Erlanger Hospital in 1929 and 1930 and as chief of surgery in 1939 and 1940. In 1933 he was elected president of the Chattanooga and Hamilton County Medical Society. For the past fifteen years he has given his services to the Tennessee State Medical Association by serving as a member of the House of Delegates and as active counselor from the Third District of Tennessee from 1935 until his recent election. He has kept abreast with his profession by attending leading clinics and medical meetings throughout the United States.

Doctor Laws is a thirty-second degree Mason, a Shriner, and a member of the Mountain City Club of Chattanooga.

If there ever was a time in the history of our medical profession when we need a strong man, it is now. Doctor Laws is a man of sterling character. He is fearless and honorable and able to carry the fight to completion. I know he will answer the call of the hour and will serve as a stabilizer to us all.

To say that an organization is fortunate in having such a man for its president is a timeworn phrase, but I can think of no truer one. The Tennessee State Medical Association could not have made a better choice. Doctor Laws is levelheaded and just and possesses a God-given personality along with executive ability—a rare combination to be found in any man. He is respected and loved by old and young alike. His popularity among his colleagues, his patients, and his many friends attests to this fact. During his administration and at the conclusion of his year in office, I am sure the association will agree with one accord that their selection was indeed a wise one.

BURTON L. JACOBS, M.D.



*(Continued from page 191)*

in regulations and, if necessary, in the law can be made.

"From now on, it seems to us imperative that experiment by agreement be undertaken on a county basis. As a suggestion, let these experiments by agreement be designed to provoke interest and active participation in welfare medical service by the most competent medical men in the experimental areas. If the welfare departments will cooperate, no physician should refuse a reasonable donation of his time for this kind of work. It is admitted that the red tape and the hopelessly inadequate financial return at present constitute a very real and solid stumbling block in the way of participation by competent and busy medical men. The same thing was true of workmen's compensation work not so many years ago. It is, however, our firm conviction that rational and cooperative voluntary experiment by competent physicians and intelligent administrators of the public welfare law will serve to demonstrate what can be done and in what respects the law must be changed."

#### PREPAREDNESS

At the present moment many schemes and proposals are advanced in the name of preparedness. Various individuals, groups, and organizations are sponsoring projects of various sorts in the name of national preparedness.

It is obvious to anyone that any step in the direction of increasing the physical fitness of people as a whole bears some relationship to the subject of military preparedness. It is also true that any movement which stimulates patriotism and loyalty to the American way of life has a very definite relationship to preparedness, but there are many proposals which bear a very remote relationship to preparedness.

Many people are led to believe that if they participate in some movement remotely related to military preparedness they are thereby displaying a proper patriotic spirit and cooperating wholeheartedly in the problems before us. This isn't so, and the sooner it is debunked the sooner and the better will our program for military preparedness move forward.

The individual can tolerate a considerable amount of foolishness in normal times and still carry on. The public likewise can tolerate a considerable amount of lost motion and foolish activities in normal times without great loss or serious injury, but in times of emergency this cannot be done.

The energies of all must be directed to the performance of tasks more immediately related to the serious problem at hand.

#### CALL FOR PHYSICIANS

The problems which face the medical profession of the United States are serious. Of first importance is the problem of meeting the medical needs of the Army and Navy.

The importance of these problems was apparent to the House of Delegates of the American Medical Association last June. A representative of the Canadian Medical Association was present and made the point that some of the rural areas of Canada were denuded of doctors by the military service and that the results were not wholesome.

It has been thought right along that the medical needs of the Army and Navy can be met by the doctors of the United States without seriously impairing civilian services provided good common sense is used.

There was a sufficient number of doctors in the Medical Officers Reserve Corps to meet the immediate needs of the Army. It is now becoming apparent that the number of reserves not on duty is depleted and needs to be augmented. This is the basis for the call recently issued for physicians to apply for commissions in the Medical Officers Reserve Corps.

In addition to meeting the needs of the Army and Navy and the civilian population of the United States there is a call from the British Red Cross for 1,000 doctors. If this need is met, it is a further strain on the medical resources of this country.

It is common knowledge that the ratio of doctors to the population is much higher in urban centers than in rural communities.

In the last few years a relatively large number of young men have been induced to locate in small towns and rural communities. They are meeting an urgent need. At the same time, some of them are

in draft age and already have reserve corps commissions and are subject to orders. It is obvious that they can be less easily spared from their communities than doctors in more densely populated areas. This situation presents one problem. Internships in hospitals present another problem. The demand for interns in hospitals is greater than the supply of recent graduates. Some hospitals are using a much larger number of interns than was the case just a few years ago.

Another case is medical teaching. It has been decided as a matter of policy that medical schools should continue their work. There are those indispensable for teaching who are to remain on duty as teachers.

It has become increasingly obvious that the problems cannot be met on the basis of *business as usual*.

It undoubtedly will be necessary for some hospitals to get along with fewer interns if an equitable distribution of interns is made. It will be necessary for teaching positions to be held by men who possibly cannot stand the physical examination for military service. It will be necessary, in all probability, to reduce the number of teachers.

A ruling has been made recently to the effect that a reserve corps commission will be offered to medical students upon their graduation; that is, to those who can stand the physical and medical examination; however, they will not be ordered to active military duty until they have completed a one-year internship.

The Preparedness Committee of the American Medical Association, together with the preparedness committees of the various states, has been struggling with these problems. A great deal of data have been accumulated and analyzed. Some sane conclusions can be arrived at. The degree of effectiveness by which all these problems are met will be determined by the degree of cooperation that is exercised all the way around.

## DEATHS

### DR. D. E. SHIELDS

Dr. D. E. Shields, Morristown; Vanderbilt University, School of Medicine, Nashville, 1883; aged eighty-two; died December, 1940.

### DR. S. W. ALEXANDER

Dr. S. W. Alexander, McKenzie; University of Tennessee, School of Medicine, Memphis, 1933; aged thirty-seven; died April 9, 1941.

### DR. R. B. GASTON

Dr. R. B. Gaston, Lebanon; Vanderbilt University, School of Medicine, Nashville, 1912; aged fifty-four; died April 16, 1941.

### DR. RAYMOND WALLACE

Dr. Raymond Wallace, Chattanooga; University of Michigan Medical School, Ann Arbor, 1902; aged sixty-five; died May 1, 1941.

### DR. WILLIS C. CAMPBELL

Dr. Willis C. Campbell, Memphis; University of Virginia, Department of Medicine, Charlottesville, 1904; aged sixty-one; died May 4, 1941.

## NEWS NOTES AND COMMENTS

Dr. Henry Carroll Smith announces the removal of his office to 630 Doctors Building, Nashville, Tennessee.

The American Medical Golfing Association's Twenty-Seventh Annual Tournament will be held at Cleveland Country Club-Pepper Pike Club, Cleveland, Ohio, Monday, June 2, 1941. Two famous championship courses and a beautiful clubhouse await the nation's medical golfers in Cleveland on the occasion of the American Medical Association convention.

Some 250 of the 1,413 fellows of the American Medical Golfing Association are expected to take part in this thirty-six-hole

competition. Each contestant will play both courses. The hours for teeing off are from 7:30 A.M. to 2:00 P.M.

The sixty prizes, in the nine events, will be distributed after the banquet at the Cleveland Country Clubhouse at 7:00 P.M.

Officers of the American Medical Golfing Association for 1941 are: D. H. Houston, M.D., Seattle, president; Harry E. Mock, M.D., Chicago, and James Craig Joyner, M.D., New York City, vice-president; Bill Burns, secretary.

The Cleveland Golf Committee is composed of John B. Morgan, M.D., chairman, 1822 Republic Building; William J. Engel, M.D.; Farrell T. Gallagher, M.D.; and F. W. Merica, M.D.

All members of the American Medical Association are eligible for fellowship in the American Medical Golfing Association. Write the secretary, 2020 Olds Tower, Lansing, Michigan, for registration application.

## MEDICAL SOCIETIES

### *Blount County:*

Papers scheduled to be read:

May 22—"Head Injuries," by Dr. L. C. Olin. Discussion to be opened by Dr. E. H. Lowe.

May 29—"Early Diagnosis and Differential Diagnosis," by Dr. W. C. Crowder. Discussion to be opened by Dr. J. M. Ousley.

June 5—"Closed Method of Treating Compound Fractures," by Dr. J. E. Carson. Discussion to be opened by Dr. H. A. Calaway.

June 12—"Uses of Vaccines," by Dr. R. H. Haralson. Discussion to be opened by Dr. J. T. Marshall.

### *Davidson County:*

April 22—"The Influence of Temperature on Wounds," by Dr. Barney Brooks. Discussion by Dr. James A. Kirtley.

April 29—"Fractures of the Humerus—Diagnosis and Treatment," by Dr. O. G. Nelson. Discussion by Dr. George Carpenter.

May 1—"Vitamin C in Healing of Surgical Wounds," by Dr. Charles C. Lund, assistant professor of surgery at Harvard Medical School, Boston, Massachusetts.

May 6—"Diabetes: Treatment of Diabetic Emergencies," by Dr. Albert Weinstein. Discussion by Dr. Robert D. Derivaux.

May 13—"Lesions of the Colon and Rectum: Differential Diagnosis," by Dr. D. W. Smith. Discussion by Dr. R. Z. Linney.

Papers scheduled to be read:

May 20—"Diagnosis and Treatment of Congenital Pyloric Stenosis," by Dr. Lynch Bennett. Discussion by Dr. W. O. Vaughan.

"Case Report: Congenital Absence of the Vagina with Reconstructive Operation," by Dr. S. W. Ballard.

May 27—"Hypothyroidism: Diagnosis and Therapy," by Dr. J. E. Walker. Discussion by Dr. C. S. McMurray.

"Case Report: Teratoma of Tongue in an Infant," by Dr. Rollin Daniel, Jr.

### *Hamilton County:*

Papers scheduled to be read:

May 22—"Tubercular Pericarditis," by Dr. Alex Steward. "Acute Infectious Croup," by Dr. Jas. C. Wright.

May 27—"Special Meeting with American Congress of Physical Therapy."

May 29—"Reconstruction of Cleft Lip," by Dr. E. Dunbar Newell.

### *Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

At our regular monthly meeting at Waynesboro, Tuesday night, April 29, we had the finest meeting and the best attendance that we have had for several months. The papers presented were:

"Eclampsia," by Dr. Stanley Hill, Corinth, Mississippi. Discussion opened by Dr. Leo Harris, Jr., Memphis.

"Pyelitis of Pregnancy," by Dr. W. E. Boyce, Flatwoods. Discussion opened by Dr. Dexter L. Woods, Waynesboro.

"Chronic Intussusception," by Dr. Morton J. Tendler, Memphis. This paper was illustrated by colored motion picture, which was followed by round-table discussion.

The first lecture of the postgraduate



course on "Internal Medicine" will be given in conjunction with the regular meeting of our society the last Tuesday in May, the twenty-seventh.

(Signed) O. H. WILLIAMS, M.D.,  
*Secretary.*

#### *Knox County:*

April 22—"Hypo-Ovarianism," by Dr. E. M. Edington. Movie, "Gonadotropic Hormones."

April 29—"Precancerous Conditions and Their Recognition," by Dr. J. B. Ely. Discussed by Drs. A. H. Lancaster and Herbert Acuff.

May 6—"Coarctation of the Aorta," by Dr. B. M. Overholt. Discussed by Drs. E. R. Zemp and Dan Thomas.

May 13—"At Ease," by Dr. E. R. Zemp. Papers scheduled to be read:

May 20—"Wound Disruption," by Dr. John Smoot. Discussion by Drs. E. G. Wood and Robert Layman.

May 27—"Obesity," by Dr. J. K. Fancher, Atlanta, Georgia.

June 3—Symposium, "Peptic Ulcer"—Pathogenesis, Dr. R. P. Layman; Medical Management, Dr. John Hill; Surgical Management, Dr. Chas. Clayton. Discussion by Drs. R. G. Waterhouse and H. C. Long.

June 10—"Malaria in East Tennessee," by Dr. Robert Watson.

June 17—"Congenital Syphilis," by Dr. A. H. Lancaster. Discussion by Drs. Frank Faulkner and G. A. Williamson.

#### *Sullivan and Johnson Counties:*

The Sullivan-Johnson Counties Medical Society met at Kingsport on the evening of April 2. Following dinner at the Inn, Dr. Jack Chesney, Knoxville, addressed the society on the subject, "The Diagnosis of Obscure Fever in Children."

(Signed) D. D. VANCE, M.D.,  
*Secretary.*

#### *Washington, Carter, and Unicoi Counties:*

The regular monthly meeting of the Washington, Carter, and Unicoi Counties Medical Society was held May 1, 1941, at 7:00 P.M. at the Franklin Club in Elizabethton, Tennessee.

Dr. Austin I. Dodson, Professor of Urology at the Medical College of Virginia, was guest of the society and read a paper on the subject, "Congenital Defects of the Urinary Tract."

Preceding the address by Doctor Dodson, a Dutch type dinner was served in the club dining room to seventy-five members and guests.

The June meeting of the society will be an "outdoor" meeting at Rock Creek Park in Erwin, Tennessee, at which time Dr. Glynn Grubb of Knoxville, Tennessee, will be the guest speaker.

(Signed) H. B. CUPP, M.D.,  
*Secretary.*

### OTHER MEDICAL SOCIETIES

#### ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, APRIL 4, 1941

1. "Case Report: Terminal Ileitis," by Dr. Albert Weinstein.

The patient is a forty-seven-year-old white man, who has had indigestion since 1924. In 1936 he had an appendectomy. Since 1939 he has had cramping lower right quadrant pain and constipation.

He was undernourished and there was a palpable mass in the right lower quadrant. X-ray studies revealed narrowing of the terminal ileum. At operation the terminal ileum was edematous, reddened and thickened, the mesentery edematous and the regional lymph nodes enlarged. The bowel was doubled upon itself, communicating through a fistulous opening.

The diseased portion of the bowel was resected together with four inches of normal intestine on either side. The continuity of the bowel was restored and the patient made an uneventful recovery.

Cultures from the tissue have shown nothing. The histologic study shows epithelial destruction, edema, and fibroblastic thickening of the intestinal wall.

This case was discussed by Drs. Barney Brooks and Chester Jones.

2. "Studies on the Effects of Heat and Cold in the Prevention and Treatment of Shock," by Drs. Alfred Blalock and Morton F. Mason.

The effects of causing rather marked elevations or depressions of the body temperature of animals in shock as a result of hemorrhage or trauma have been determined. Significant elevations of temperature decrease the chance of survival and shorten the survival time. The application of cold does not increase the chance of survival, but is accompanied by a lengthening of the survival time of an animal with a low blood pressure. Significant elevations of temperature cause more disastrous effects than similar depressions.

This paper was discussed by Drs. William Govier, Barney Brooks, and Paul D. Lamson.

3. "Hypoglycemia as a Factor in the Production of Symptoms Referable to the Cardiovascular System," by Drs. Addison Scoville and Tinsley Harrison.

Decline in blood sugar may induce symptoms simulating those occurring in patients with cardiac neurosis or, in individuals who have various types of structural cardiovascular disease, may be a trigger factor in producing arrhythmias, attacks of angina pectoris, and seizures of hypertensive encephalopathy. In the diagnosis too much reliance cannot be placed on the blood sugar because the level of blood sugar, at which symptoms of hypoglycemia appear, varies markedly in different individuals. That the symptoms complained of never appear within one and a half hours after a meal and that the symptoms can be reproduced by the administration of insulin are valuable diagnostic criteria. The most effective treatment of spontaneous hypoglycemia is the use of a diet restricted in carbohydrate and high in protein with small intermediate feedings.

This paper was discussed by Dr. Hugh Morgan.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

#### Possible Cardiovascular Changes in Local Anesthesia.

Pickering, McCooey, Steinmeyer, and Luckhardt. *Journal of American Dental Association*, November, 1939.

The administrations of local anesthetics for dental operations frequently cause unpleasant symptoms, especially when used in combination with epinephrine. Increases in blood pressure, pulse rate, and respirations are some of the symptoms observed, also nervousness, fainting, and tremors may occur. Hyperthyroid patients are extremely sensitive to solutions containing epinephrine.

Procaine-epinephrine solutions were used in experiments on dogs. Nineteen normal dogs were used and nine in whom an artificial hyperthyroid state had been produced. Under general anesthesia the action of procaine-epinephrine solutions were observed. In normal dogs there was a rather marked pressure action. In the hyperthyroid dogs there was found to be no marked deviation in blood pressure changes from the normal group. The striking elevations of blood pressure were not due to psychic conditions since the animals were under general anesthesia. The hyperthyroid animals would no doubt have shown more pronounced effects had they not been anesthetized.

### FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Studies of Cases of General Paresis in Delaware State Hospital. Persis F. Elfeld, M.D., Farnhurst, Delaware. *The Delaware State Medical Journal*, X: 5: 73, May, 1938.

The results of inductotherm were at first thought not to equal those of malaria. However, combining inductotherm with tryparsamide seems to be producing results which are equal. Both are hazardous forms of treatment in the presence of other pathology. Inductotherm offers the advantage in that it is possible to terminate the treatment as soon as adverse symptoms appear. However, its value does not seem to be as great unless it is combined with tryparsamide. Since tryparsamide, as is commonly known, may, in some individuals, have a definite effect on the optic nerves, it is necessary to examine the visual field before each treatment and to question thoroughly regarding subjective symptoms. At the sign of the least difficulty, it is necessary to discontinue the treatment immediate-



ly. Should visual difficulty occur, repeated spinal drainage will in most cases restore normal vision.

Malaria is a more dangerous condition in that the reaction is not as easily controlled. Occasionally a recurrence of the malaria has appeared months after it was thought that the patient was cured.

It can only be stated that the prognosis of general paresis is fairly good if the cases are diagnosed early and carefully treated, with all other physical abnormalities taken into consideration. Needless to say, all syphilitics are entitled to one or more spinal fluid examinations, even though neurological and mental symptoms are not present.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Cancer of the Cervix Following Supravaginal Hysterectomy. Geo. Gray Ward, M.D., F.A.C.S., F.R.C.O.G., Hon., New York, New York. American Journal of Obstetrics and Gynecology, 660: 663, April, 1941.

There is still a difference of opinion as to the advisability of doing a total hysterectomy in all cases if the uterus is to be removed as a prophylactic measure against a possible carcinoma developing in a retained cervix. In 1934 Von Graff wrote an article advocating that total hysterectomy should be done routinely. Since then several authorities have taken the opposite view in their discussions. All will agree that the total operation offers the best protection from cancer, although cancer of the stump is more serious and more difficult to treat, with less hope of success than cancer of the cervix with the fundus present. With the exception of the increased frequency of fistula, which may be due to the carcinoma as well as the radium, in view of our results and those obtained by Scheffey, Behney, and others, I do not believe the above statement is justified. In my opinion, total operation is to be preferred and is my present practice, because of the evident higher incidence of stump cancer than was formerly thought to occur, and of the frequent association of cancer with fibroids. Yet we must recognize that in average hands there is more danger of a higher mortality, and such complications as injury to the bladder and ureters, infection, and lack of vaginal support than in skilled hands. Also the expert surgeon will meet cases with a definite increase in risk due to obesity, adhesions, fixation, or systemic disease, which makes the subtotal operation a safer and wiser procedure. If, however, the subtotal operation is considered, a careful study of the cervix should be made and appropriate treatment used if indicated. In all subtotal operations, the possibility of cancer should be borne in mind, and a careful follow-up for an extended period of time is essential for safety.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Surgery of the Lacrimal Passages in Stenosis of the Lacrimal Canaliculi. H. I. Pokhisov. American Journal of Ophthalmology, March, 1941.

In traumatic stenosis of the inferior lacrimal canaliculus, epiphora is present in spite of the patency of the superior lacrimal canaliculus. This is because in the upright position the superior punctum is slightly everted and, therefore, does not function. The author excises a piece of conjunctiva from the upper lid around the upper lacrimal punctum. This procedure places the upper punctum in closer opposition with the eyeball and increases its function to the extent of complete cessation of epiphora.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Sulfathiazole Therapy of Infantile Diarrhea. Grant Taylor, M.D., Durham, North Carolina. The Journal of Pediatrics, April, 1941.

In a group of twenty-seven children admitted to Duke Hospital between July 15 and November 15, 1940, because of parenteral diarrhea or bacillary dysentery, every other patient (or thirteen) was treated with sulfathiazole in initial oral dose of fifteen grains per year of age up to a maximum of forty-five grains, followed by the same daily amount divided in six doses. The alternate fourteen patients served as controls. The patients in the two groups were comparable in regard to age, seasonal incidence, severity, intoxication, type of infection, number and character of stools, and laboratory studies. Except for the sulfathiazole, the treatment was the same in the two groups, and six of the control group were given sulfathiazole late in their course.

All patients were treated as follows: (1) oral, subcutaneous, and intravenous one-sixth molar sodium lactate solution as indicated; (2) five per cent dextrose intravenously as indicated; (3) parenteral fluids to combat dehydration; (4) blood transfusions following hydration if indicated; (5) nothing by mouth for the first twenty-four hours except Ringer's solution with saccharin and weak tea *ad lib.*; (6) after the initial fast, a formula of equal parts of evaporated milk and water with .75 per cent lactic acid and five per cent casein was offered; (7) daily maintenance parenteral doses of thiamin chloride and ascorbic acid.

As to the results the author states: "The average time required for the stools to reach four a day of normal color and consistency was 3.2 days in the sulfathiazole-treated group and 15.6 days in the control group. No deaths occurred in the sulfathia-



zole-treated group. Of the fourteen controls, two died, one after a protracted hospital course of twenty-seven days, and the other nine hours after admission. In the sulfathiazole-treated group, the duration of diarrhea after admission bore no relation to the duration of diarrhea prior to admission; however, in the control group, recovery was later in those who had had prolonged diarrhea prior to admission.

"The only reaction which could possibly be attributed to sulfathiazole was a slight increase in jaundice in one patient shortly after sulfathiazole was given. This child received .9 gram of the drug on the fourth hospital day. Although the sulfathiazole was discontinued immediately after the increase in jaundice, the jaundice persisted for several days. As the patient had received multiple transfusions prior to the administration of the drug, sulfathiazole may not have been responsible for the increase in the jaundice.

"Sulfathiazole is effective in the treatment of children with parenteral diarrhea or bacillary dysentery, particularly the latter."

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

Radiation Therapy of Diphtheria Carriers. I. I. Kaplan.  
Radiology, Vol. 35, No. 4, p. 425, October, 1940.

The diphtheria carrier has long been a problem. In New York City in 1938 there were 396 carriers on record and 700 cases of diphtheria occurred.

Osler and McRae state in their text that no satisfactory method of ridding the carriers of the bacillus exists. During the early years of the use of X-rays, it was shown experimentally that there was no bactericidal effect on the Klebs-Löffler bacillus. However, in 1922, Hickey reported that out of thirty-four carriers, twenty-three were cured by X-ray treatments. Others have reported similar results.

During 1937-1938 more than a hundred carriers were treated at the Willard Parker Hospital. The usual treatment was various sprays and swabs with antiseptics and other efforts to clear up any focus of infection that might harbor the diphtheria organisms.

Eleven cases who did not clear up on all other types of treatment were referred for X-ray treatment. All were cured. In most cases, three treatments were required; in a few, four or five treatments were required. In four cases, only one treatment was given. In only two cases were any untoward symptoms noted; these consisted of pain in the jaw following the treatment, but these cleared up in twenty-four to thirty-six hours.

The technique used was 180 to 200 kilovolts, .5 millimeters copper plus one millimeter aluminum filter at forty to fifty centimeters distance, through eight by ten or nine by twelve centimeter ports. Both sides of the neck were treated on the same

day and the rays directed through the tonsillar area, 150 r being given to each side of the neck. The treatments were repeated at weekly intervals.

## CONCLUSIONS

X-ray therapy is a harmless effective method of treatment for persistent diphtheria carriers. It may be employed in all cases, regardless of age or sex. High voltage X-ray is employed. X-ray treatment was used only when all other forms of therapy proved ineffective.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
1400 Monroe Avenue, Memphis

The Intra-abdominal Application of Sulfanilamide in Acute Appendicitis. James E. Thompson, M.D.; John A. Brabson, M.D.; and John M. Walker, M.D. Surgery, Gynecology, and Obstetrics, 72: 722 (April), 1941.

An analysis is made of acute appendicitis in the Roosevelt Hospital from 1935 to 1940, inclusive. Only cases of acute suppurative appendicitis are considered, including those complicated by rupture with abscess and peritonitis. Every case of appendicitis is considered an emergency and in this group the conservative method of treatment is not used, and even where peritonitis is present, operation is delayed only long enough to replenish fluids, electrolytes, or blood proteins. Only in those patients too critically ill to withstand any procedure is operation deferred. In cases of abscess operation is delayed only if the localizing process has been completed when the patient enters the hospital. The McBurney incision is employed in ninety-five per cent of cases and the appendix is removed with cautery or phenol knife, inverting the stump without ligating its base. In abscess cases only drainage is done where removal of the appendix would spread infection.

In January, 1940, the use of sulfanilamide crystals placed directly into the peritoneal cavity was begun. The weighed, powdered drug is sterilized by heating in test tubes at 120 degrees centigrade for one-half hour. Varying quantities of the drug are placed in the peritoneal cavity and a smaller amount in the wound layers. The average dose recommended in cases of peritonitis is eight grams intraperitoneally and four grams placed in the layers of the incision. Age and weight may modify dosage, one-quarter to one-half the adult amount being used in children. Usually 175 milligrams per kilogram of body weight is employed. The average peak of sulfanilamide concentration was found to be 6.9 milligrams per 100 cubic centimeters of blood and this level was reached in an average of 14.7 hours after operation. The beneficial effects are thought to be due to a local action rather than a systemic effect. No toxic effects were noted except some cyanosis and persistent elevation of temperature in a few instances thought to be due to the drug.

Sulfanilamide was used in this manner in fifty-nine cases and in fourteen of these it was continued by mouth or by rectum. During the period from 1935 to 1939 before the use of sulfanilamide was begun, there was a gross mortality of 2.7 per cent. In the year 1940, the total number of cases was 204, including twenty-one cases of abscess and thirty-one of peritonitis with no death in this series.

### UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Strictures of the Male Urethra and Trichomonas Vaginalis. L. W. Riba and R. M. Harrison. Surgery, Gynecology, and Obstetrics, September, 1940.

In 1837 Donne expressed the opinion that gonorrhea infections and trichomonas were symbiotic. Whether or not trichomonas are pathogenic is controversial. However, most observers are convinced that they do cause purulent inflammatory reactions.

De Lee, in 1920, called attention to their frequent occurrence in the female vagina. Allen noted the frequency of vesicle irritability—up to fifty per cent—accompanying trichomonas vaginitis. Maxwell found that twenty of thirty-three women with the disease had urinary symptoms.

During the past forty years many reports of trichomonas infection in the male genitourinary

tract have been presented. Drummond, in 1936, reported trichomonads in five husbands whose wives were known to have this disease. Nitschke, also in 1936, found trichomonads in twelve and one-half per cent of forty cases with nonspecific urethritis.

While trichomonas infection and gonorrhea have been found simultaneously in the female to date, similar reports have not been published of the male.

In twenty-three cases of male trichomonas reported by these authors, urethral strictures were present in sixty-one per cent, and in another series of 140 cases with strictures trichomonas were found in ten per cent.

Of twenty patients with urethral strictures and trichomonas infection, seventy per cent were married. Of these fifty-seven per cent of their wives were known to be infected, sixty-five per cent admitted previous gonorrheal infection, eighty per cent presented a mucopurulent discharge, and two of the cases had gonorrheal infection.

The treatment consisted of oral medication of one-half grain acriflavine tablets or sulfanilamide, prostatic massage, local instillation, and urethral dilatation.

Follow-up revealed that eighty-three per cent became symptom free. In twenty-two per cent, however, trichomonas were still present. Two cases failed to return for a checkup, and in one symptoms and infection persisted due to a pyelonephritis.



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## THE TUBERCULOSIS CONTROL PROGRAM IN TENNESSEE\*

R. S. GASS, M.D.; W. W. HUBBARD, M.D.

State of Tennessee, Department of Public Health

A program designed to control a communicable disease such as tuberculosis must take into consideration many factors, and the activities of various agencies. This discussion, however, is limited to an exposition of the organization, policies, and functions of only one of these agencies, the Tennessee Department of Public Health.

The Division of Tuberculosis Control is the administrative unit of the Department of Public Health dealing with the disease. Its policies are formulated in group meetings of the commissioner, the staff of the division and an advisory committee of five tuberculosis specialists representing various sections of the state. The group meets at regular intervals to discuss administrative problems, and recommendations are submitted to the Public Health Council for approval before being put into practice.

The division is subdivided into three service units, Research, Field Diagnostic Service, and Hospitalization Service. A further activity, an educational program, is a function of the division as a whole.

I. Research: (Williamson County Tuberculosis Study)

A special epidemiological study of tuberculosis as it occurs in this area has been conducted in Williamson County since 1931.

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

Members of approximately 850 families (white and colored) in which the disease has occurred have been observed and examined frequently since the beginning of the study. Careful investigation and analyses have been made of:

1. The course of the disease in each patient, according to the extent of the lesion at the time of diagnosis.
2. The prevalence of tuberculous infection and disease at the time of the investigation, according to type of case present in the home (sputum positive or negative).
3. Morbidity and mortality in families of the tuberculous according to length of exposure and type of case in the home.
4. The study of results of tuberculin tests and X-ray examination of school children.

The findings of the investigations of the study are applied practically to policies and activities of other services of the division.

II. Field Diagnostic Service:

The division maintains four traveling units, each staffed with a full-time clinician and X-ray technician. Each unit is equipped with a portable X-ray machine and accessories, and examination clinics are held on regular schedule in fifty-nine rural counties having full-time health departments. Services are now being extended to counties



without local health departments as rapidly as arrangements can be made. An average of twenty patients daily are examined in each clinic.

The purpose of the service is twofold:

1. Case finding: The objective being to locate and bring under medical observation unsuspected cases of tuberculosis, not only cases in early stages of the disease, but also chronic fibroid cases masquerading as "asthma," "bronchitis" or "chronic malaria," etc.

The examination of all adult household contacts of positive sputum or fatal cases is stressed, but little emphasis is placed on the examination of children, prior to puberty, exposed under similar conditions.

2. Consultant diagnostic service: Physical and X-ray examination of those suspected of having tuberculosis is provided for confirmation of the diagnosis, and X-ray check-up of those under treatment (especially collapse therapy) is made available. This service is of special value in areas where X-ray facilities are not available, or where patients are unable to pay for such examinations.

No person is accepted for examination in any clinic except upon written request of his family physician, who is the judge of the patient's eligibility for the service. No advice concerning physical findings or treatment is given the patient by the clinician. Reports of physical and X-ray findings are sent only to the referring physician to whom the patient is instructed to return for advice.

All X-ray films exposed in field clinics are forwarded to the central office where they are developed and read. A physician may obtain, upon request, any film made on his patient, with the understanding that it will be returned within a reasonable period of time.

A nursing service is important in a control program, and is conducted through the nursing staff of the local health departments. With the permission of the attending physician, the nurse makes periodic visits to the homes of the tuberculous patients, not to render bedside nursing care, but to assist the family in carrying out the

physician's instructions. She aids the family in working out to the best advantage isolation facilities available in the home, and teaches precautions to be followed in preventing spread of infection to other members of the household.

### III. Hospitalization Service:

An annual state appropriation for aiding counties and municipalities in providing hospital care for indigent tuberculous patients was made available by legislative action in 1939. Use of the fund is supervised by the Division of Tuberculosis Control, subject to the regulations of the Public Health Council.

Funds are allocated to each county on a population basis, and unused funds are re-allocated on a basis of need to other counties.

Fifty per cent of the daily cost of maintaining a patient in an approved hospital may be provided, but state's share of costs is not to exceed \$1.25 per day per patient. The balance of costs must be provided from local sources. A recent amendment has made available a small part of the annual appropriation for emergency use where local funds cannot be obtained. In such cases, the maximum of state aid is \$2.50 per day.

Limitation of medical and hospital facilities, as well as local funds, have made it necessary to develop a program of limited hospital stay in order to assist as many patients as possible. (There are only three small capacity private tuberculosis sanatoria, and a few beds in one of the large sanatoria available to patients resident of the ninety-one "rural" counties.) A collapse therapy program has been stressed to obtain the maximum benefit of a limited hospitalization period, and since prolonged hospital care for isolation purposes chiefly is not feasible, the additional value of converting open cases (sputum positive) into closed ones is of importance in reducing the hazard of spread in the home.

Pneumothorax is the method of choice in most instances. After treatment has been initiated in a hospital, usually a general hospital, arrangements are made with the nearest physician to the patient's home, who is experienced in this work, to continue re-fills.

Where only sanatorium care is indicated, selected patients who are not suitable for collapse therapy may be hospitalized in a sanatorium in order to learn the fundamentals of personal care by observation of hospital routine, and association with other patients ill with the same disease.

#### IV. Educational Program:

It is essential that the public have some knowledge of fundamental facts concerning the cause, mode of spread, nature of the disease, treatment and prevention if tuberculosis is to be controlled. No medical and hospital facilities can render effective service if reasonably well informed support of the public is lacking.

A rapid general diffusion of these facts can best be obtained through the schools, especially the high schools. The high school student is reaching the age group where clinical tuberculosis is most prevalent, he has fewer preconceived ideas to "unlearn," he takes information into his home perhaps more effectively than any other agency, and in the very near future he will have a home of his own.

Consequently, the educational program has been directed toward the high school group. Through a cooperative arrangement of the Departments of Education and Public Health, guides for teachers have been prepared and placed in high schools with pamphlets relating to tuberculosis to be used as reference material by students. Facts concerning tuberculosis have been taught in biology, general and social science, and home economics classes.

Following this course of instruction the health department has offered to the high school students a tuberculin test, and those who had a positive reaction were X-rayed in the school. This program was conducted as a demonstration, and was not considered as a case-finding survey. Reports of the tuberculin reaction and X-ray findings were sent to the family physician specified by the student from whom further examination or advice as indicated was obtained.

The object of the demonstration was to familiarize the student with the tuberculin test, to demonstrate the use and value of X-ray examinations of the chest, and to

encourage consultation of the family physician for advice.

Other phases of the program have been the preparation of materials showing the tuberculosis problems of the state.

#### SUMMARY

As one of the agencies involved in a program for the control of tuberculosis, the Tennessee Department of Public Health has provided:

1. Facilities for intensive study of the disease as it occurs in this area.
2. Traveling clinics for rendering diagnostic service to rural physicians, and for finding and bringing under medical care unsuspected cases of tuberculosis.
3. Financial aid to counties for hospitalizing indigent cases of tuberculosis.
4. An educational program for increasing public knowledge of the fundamental facts concerning tuberculosis, and the problems encountered in this state, and for encouraging the use of available medical and surgical facilities.

#### DISCUSSION

DR. J. B. NAIVE (Knoxville): Mr. President and Gentlemen of the Association: I feel that we are very much indebted to the State Department of Health for the fine work which they have done looking toward the control of tuberculosis, and particularly for doing such a fine piece of work with the facilities which they have at hand.

The state of Tennessee has been, unfortunately, limited in facilities, and that is reflected in the unusually and uncomfortably high death rate that the state of Tennessee has. With the exception possibly of Maryland, of which I cannot be sure, it has the highest native tuberculosis death rate in the United States, due, I guess, primarily to the fact that we don't have beds enough; as the bed occupancy increases, invariably the tuberculosis death rate decreases.

I think that their work has been particularly fine because it has been so fundamentally sound. Anyone who wishes, either in an institution or with a far-flung organization like the Department of Health, to accomplish anything in fighting tuberculosis must, first of all, have the full cooperation and sympathy of and must enlist the support of the medical fraternity. Without that you fail before you start; with that you can whip not only tuberculosis, but many other diseases.

They have worked in such a way as to do exactly that thing. I have known of this work from the first; in fact, I had the pleasure of assisting with it a little bit a long time ago in the early days, and



I know precisely the degree of interest that they gave to this matter of keeping faith with the profession. They have done just that, and that accounts, I think, in large measure, for the success which they have obtained. In other words, in their clinics they accept these people as consultation cases at the request of their own physicians, and only at the request of their physicians, and report back to these physicians, as one should do in a consultation case; and do not discuss the case, under any circumstances ever, with the patient or with the patient's family, because whenever you start doing that, sooner or later, in spite of every precaution in the world, you will cause a lot of trouble.

Some of the things which they have done interests me particularly. I think their X-ray work and free traveling clinics are exceptionally fine. I may be a little overenthusiastic in the matter of the importance which I attach to X-ray work, but it is an honest mistake, anyhow. I have reached the point where I feel that the physical examination is absolutely not enough. If you want to get these cases early when you can do the most for them, you cannot count upon doing it with your physical examination. I make no exceptions. I would include myself in that category as quickly as I would include anyone else, because there is nobody who can be as precise as it is necessary to be. In other words, we have the availability of a precise instrument in a precise age; namely, the X-ray. Why in heaven's name not use it? I see case after case so early that no one could possibly hope to diagnose them on the basis of physical signs, and the X-ray makes the diagnosis at a time when there has been no breakdown of lung tissue, when you can do the very most for the patient, not only helping him to get well quickly, but enabling him to stay well.

May I, then, make this appeal to you to use their facilities more and more and more.

I was interested in what Doctor Hubbard said about the average age period. In general, that has been our experience. I was much disturbed, however, two or three weeks ago in the diagnosing of a case of pulmonary tuberculosis, far advanced, with a positive sputum in a girl thirteen years old. I had been proceeding on the assumption that we wouldn't find pulmonary tuberculosis at that age. I cannot do that any more because she is there to prove I am wrong, so I think I must throw that assumption out. While agreeing with him in general, in individual cases one may run into something like that at any time.

The pneumothorax work is magnificent. Collapse therapy is the greatest advance which has been made in the treatment of tuberculosis in probably fifty to seventy-five years, if not the greatest advance that ever has been made, and I think that is a splendid activity—training men to do the work out in the field, particularly now since we seem to have a promise of a surgical unit where this pneu-

mothorax work can be backed up by the other work which is often necessary to make the program more effective, or to get collapse in cases which cannot be collapsed under pneumothorax.

Since we are going to be tremendously short of beds, then we shall have to make it up in other ways, and I don't know any better way to make it up than to try, first of all, to get early diagnoses; second, to get collapses in every case where it is possible. I believe if we do that, even though we are tremendously short of beds, we will be able to accomplish a great deal.

I believe Doctor Carr is here, and I would rather listen to Doctor Carr in any unexpired portion of my time than to listen to myself. I should like to thank you for your attention and to resign in favor of Doctor Carr.

DR. D. M. CARR (Memphis): Mr. Chairman and Members of the Association: I want to thank you for the opportunity of being here and of hearing Doctor Hubbard's talk and Doctor Naive's discussion. Doctor Naive has stolen about two-thirds of my thunder, but I agree thoroughly with what he has said in regard to the purposes and policies of the Division of Tuberculosis Control. They are doing a fine work, and if the individual, privately practicing physician will avail himself of their services it will be to his benefit as well as to the benefit of his patients.

I was a little disappointed that Doctor Hubbard said nothing about his hopes and aspirations concerning the state hospital which we intend to have. You all know that the appropriation has passed the state legislature, a sufficient appropriation for a small tuberculosis hospital. I may be speaking out of turn, but I would like to mention here, as a private physician associated with no organized tuberculosis control group, what I hope will be the use made of those available funds. As you all know, the physical isolation of every tuberculous patient in the state would result, in a relatively short period of time, in the complete eradication of the disease. Unfortunately, physical isolation of every patient is not possible nor feasible. There is a type of isolation, however, which is possible and feasible, and that is therapeutic isolation of the patient; in other words, the closure of the patient's cavities, the conversion of the sputum from a positive to a negative condition, therefore eliminating the infectivity or contagiousness of that patient to his family and his community. That is, of course, the aim and ambition of every one of us engaged in chest work.

In order to close cavities with any degree of rapidity or certainty we all concede now that collapse treatment is essential. We also agree that while a number of tuberculous patients will, in time, close their cavities spontaneously, the majority do not do so with any permanence. With our limited funds and bed capacity, we must, then, look to a plan which will allow us to use them with



the greatest possible economy. To me, that means the establishment of a surgical hospital, or hospitals, where perhaps six to eight patients per year can be treated in one bed, making a total over the course of a year, with a hundred beds, of six or eight hundred patients in contradistinction to the 100 or 150 patients which could be treated in isolation. Therefore, I hope that it will be possible for the proposed hospital to be established as a surgical unit where pneumothorax may be established, where intrapleural pneumonolysis may be carried out, where extrapleural pneumothorax, thoracoplasty, phrenics, and other surgical procedures may be performed.

Any of you who do thoracic surgery—and I see at least four men here who I know do it—realize that a surgical patient in tuberculosis requires a great deal of workup and followup which far exceeds that required by the general surgical patient. It is intensive work; it is exacting work; it requires special knowledge. Moreover, you realize that there are other diseases in these patients than tuberculosis. For that reason, I would like to see these hospitals established in conjunction with our medical schools of the state as additional units to the hospitals of the medical schools where there will be a ready consultation service with internists, urologists, nose and throat men, and all other forms of medicine; furthermore, where the students may have the benefit of the teaching of tuberculosis and allied conditions by experts so that the profession as a whole will know more about tuberculosis ten, fifteen, twenty years from now.

I would like to see the hospital divided and established in conjunction with the schools for the distribution factor, part of it here in Nashville, part of it in Memphis; if there were a medical school, part of it in Knoxville. But, as you know, West Tennessee is the hotbed of tuberculosis, and traveling is a factor in getting any tuberculous patient to his institution; the wider distribution would be beneficial.

Any of you who have influence I hope will use it and think over that plan which has been satisfactorily worked in the University of Michigan with a hundred-bed unit right on the top of the hospital. If you agree with that idea, use your influence and let us see if we cannot arrange it in that fashion.

DR. W. W. HUBBARD (closing): I shall not attempt to discuss very much the elaboration that Doctor Naive and Doctor Carr have given to these remarks. I appreciate their discussion.

I would like to mention further what Doctor Naive had to say about children. Our facilities are somewhat limited, and we have to use them to the best advantage possible. For that reason, we have confined case-finding procedures largely to young adults and adults in contact with open cases because that is where we find most of the tuberculosis.

There are good reasons for watching young children in contact with open cases, and certainly we wouldn't want to create the impression among physicians in private practice that this is a procedure that should be overlooked, but from our standpoint, that is the case-finding and control standpoint, and from the standpoint of the limited facilities we can best produce results by limiting our case-finding facilities to taking in young adults and older people.

I purposely left out any mention of the proposed state hospital because at present no plans have been formulated. There has been, as you know, provided by the legislature an appropriation of \$500,000 in a bond issue, and a committee of five men is to supervise the handling of the funds. They are authorized to select sites, to contract with architects and others for the construction of the hospital, but there are no provisions in the bill as to use of the hospital. I imagine that policies will be left up to the Public Health Council, as most matters of that sort are.

I don't know just what this committee proposes to do, but I do know they have met, they have organized, and they have been gathering a good bit of information about the state and about appropriations in other states.

I would like to stress what Doctor Carr mentioned as to this idea of closing positive sputum cases.

We have here in this state an age group distribution such that we find a large number of elderly people with chronic fibroid tuberculosis with positive sputum. These people are the spreaders, and they are the most difficult ones to reach. They are the most difficult to control after they have once been found. Certainly something will have to be done for the chronic fibroid case if anything is to be done to control the disease.

## TUMORS OF THE BREAST\*

C. L. CHUMLEY, M.D., Knoxville

In recent years, the differential diagnosis of benign and malignant breast tumors has become a problem of great concern and increased responsibility to the physician. There was a time, not so many years ago, when the majority of patients who sought medical assistance on account of a lump in the breast were found to have a well-advanced malignant tumor. Diagnosis of these lesions was, as a rule, not difficult. Treatment in many of the cases offered little hope of cure and often was palliative in nature. Today we are seeing an increasingly large proportion of breast lesions early so that their true nature is frequently in doubt after ordinary clinical examination and special methods of study are required to reveal the correct identity of these growths. This change can be attributed largely to the effort that has been spent in educating the public in regard to the value of early diagnosis and treatment of any abnormal condition appearing in the breast.

When a woman consults a physician concerning a lump in the breast, she does so with two possibilities in mind, namely; the growth is or is not a cancer. It then becomes the obligation of the first examining physician to see that a definite diagnosis is established in all patients who come under his care. We must, therefore, so educate ourselves that after examining a patient with a lump in her breast, we can advise her as to the best course to pursue. Only in this way will malignant tumors be cared for adequately and promptly and benign ones given the conservative treatment which they require.

In this paper, I wish to present a brief discussion of breast tumors emphasizing the importance of differential diagnosis between benign tumors as a group and malignant tumors. A discussion of some of the more common types of tumors is included.

The diagnostic measures in use in the management of the patient with a breast lesion are: (1) the history, (2) physical

examination, (3) transillumination, (4) X-ray examination, (5) cancer shadow test, and, (6) biopsy.

*History.*—The history as related by the patient may be of much or little importance and in some cases it may be misleading. I believe, however, that a careful and complete history should be recorded routinely at the time of the patient's first visit. This should include the age, marital status, reproductive history as well as a detailed account of the present illness. A history of trauma should not be ignored, as injuries to the breast resulting in a hematoma or fat necrosis may be followed by firm lesions which closely resemble carcinoma. The menstrual history should be inquired into, particularly any change taking place at the time of onset of breast symptoms. The character of any breast pain is important, its severity, distribution, radiation, and relationship to menstruation is noted. Any history of discharge from the nipple should be investigated to determine whether it is bilateral, whether it has persisted from a previous pregnancy and, finally, as to its appearance, whether clear, milky or sanguineous.

*Physical Examination.*—A general physical examination, including the pelvis, should be routinely and thoroughly performed. Examination of the breast should be made with good light and in both the sitting and recumbent positions. Asymmetry, distortion, malposition of the nipple, and any change in color of or consistency of the skin is noted. Palpation of the breasts is most important but gentleness in manipulation of a tumor-bearing breast is stressed. The consistency of the tumor, its location, whether circumscribed, whether freely movable in the breast tissue or with the breast tissue, and any tenderness are recorded. Fixation of the growth to the skin or underlying structures is noted. If the tumor is unattached to the skin, any change in tension or dimpling of the skin on moving the breast in various directions is significant.

If a history of nipple discharge is obtained, slight pressure begun at the border

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of the areola and continued up over the nipple should yield a specimen of the contents of the terminal ducts, if any fluid is present at the time. The character of any fluid obtained is observed and an attempt made to locate the duct from which it came by pressing on different sectors of the areola.

The axillary region is palpated and the number, size and consistency of the lymph nodes recorded.

*Transillumination* as first described by Cutler is carried out in a dark room. The method is frequently of value in distinguishing a cyst containing clear fluid from a solid tumor. In addition, it may be helpful in locating papillomas of the ducts. The method is of no value in differentiating between benign and malignant solid tumors. In the examination of patients with large, heavy breasts or deep-seated tumors, transillumination is of questionable value.

*Roentgenographic examination* of patients with breast tumors, formerly used to determine the presence of metastatic lesions, has, in recent years, come into use in the study of the breast itself. For this purpose two methods are employed: (1) soft tissue films of the breast, and (2) mammography or X-ray studies following the injection of contrast media.

While many roentgenologists believe that little information can be gained from ordinary soft tissue films of the breast, there are some observers, notably Lockwood, Seabold, and Warren, who consider roentgen examination as a valuable and accurate addition to the present methods for the recognition of cancer as well as other diseases of the breast. According to Lockwood, the value of breast radiography is shown by the high percentage of diagnostic accuracy in the differentiation of benign from malignant lesions and is exceeded only by the microscopic examination of excised tissue. He finds the limitations of this method are: the inability to recognize the microscopic areas of cancer; early malignant degeneration in benign tumors and early carcinoma associated with chronic cystic mastitis. In his hands, roentgenograms may establish the following: the presence of a mass, often

before the disease is clinically apparent; define its mammary or axillary extensions; reveal both benign and malignant changes and the transition of a benign into a malignant lesion; offer a permanent record of the findings; be a means of serial study of the changes in the breast; offers none of the physical limitations of transillumination, and in those cases positive for cancer, the need for biopsy can be eliminated.

A comprehensive knowledge and familiarity of the roentgen appearance of the normal breast under all conditions of growth and physiologic activity must be acquired by the roentgenologist before he can hope to make real progress in the development of the roentgen method of diagnosis of breast tumors. Few men in this field have acquired such knowledge and experience, and therefore the method has not come into general use.

Hicken and his associates introduced a method which they termed mammography for the roentgenographic diagnosis of breast tumors by means of contrast media. The media is introduced into the milk ducts through the small estuaries of the nipple or by injecting directly into a cystic tumor after having removed the contents of the cyst by aspiration. Of the various media used, they found thorotrast most suitable. By this method they were able to diagnose papilloma, simple retention cysts, cystic degeneration of the breast, galactoceles, carcinoma, and retention mastitis.

At the present time, with thorotrast as the medium used to outline the ducts, it is the feeling of many observers that the dangers inherent in its use more than offset the value of any information obtained. When a harmless medium is found, the method will be more generally used and of great value in localizing duct papilloma and other lesions of the breast associated with a discharge from the nipple.

Radiographic examination of the chest is an essential part of the examination in any case of breast tumor where the possibility of cancer is to be considered. There are some clinicians who require films of the spine, pelvis, and shoulder girdle, including the humerus and femur. Although any of



these bones may become the site of metastatic involvement, it seems unnecessary to subject the average patient to the expense of securing these X-ray studies as a routine. Those patients with a complaint referable to the skeletal system or those in which physical examination reveals evidence of bone disease should be subjected to complete X-ray examination.

*Cancer Shadow Test.*—Scott described a method for the differential diagnosis of breast tumors which he designated "The Cancer Shadow Test." In his clinic it proved to be a very accurate test for early recognition of breast malignancy as shown by 91.3 per cent correct preoperative diagnosis made in 207 breast tumors. He reports an early carcinoma less than one centimeter in diameter detected by this method.

Scott points out that any cancerous involvement of the interlobular fascia, to which Cooper's ligaments are attached, may restrict the ligaments and skin when the tumor is moved in a position to make these fascial tissues tense; and the slightest pull or traction on them will produce depressions in the skin shown by significant shadows when properly demonstrated.

Scott suggests that while the cancer shadow test is being made, the room should be darkened and the breast to be examined gently elevated while the tumor is manipulated into various positions. With each change of position, a pencil type spotlight is slowly raised and lowered. When a feeling of tension is detected by the examining fingers, if a malignant growth is present, the cutaneous depressions or flattened areas appear. They become quite visible as the glancing light casts irregular shadows in proportion to the size and depth of the depressions. These depressions are magnified by shadows in the same manner as the uneven surfaces of a highway are made visible and magnified at night by shadows cast from the glancing lights of an automobile. Scott found that while cutaneous depressions as observed by magnified shadows are present in a high percentage of malignant breast tumors, they may be misleading when located within the areola or near its borders. Also surface depressions resem-

bling cancer depressions may be observed in breasts which have been the site of previous inflammatory process, severe trauma or an incisional scar.

*Biopsy.*—If thorough clinical examination reveals a breast lesion to be distinctly malignant, radical mastectomy should be performed without disturbing the local growth. This is often not the case and the exact nature of the tumor remains doubtful. In such lesions it is by examination of the tumor itself, both grossly and microscopically, that we are able to arrive at a correct diagnosis. The problem involved in the management of these cases is the performance of a biopsy which will permit of gross as well as microscopic examination of the tissue under suspicion without endangering the patient's chances of a cure by surgery if cancer is present. The method used must give an exposure of all abnormal tissues in order that the patient who has a benign tumor may be given assurance that cancer is not present in her breast.

In planning a biopsy, the patient is admitted to a hospital with the necessary laboratory equipment for frozen section work. The patient and operating room are prepared for a radical operation. An incision adequate for good exposure is made and the entire lesion is excised, together with a good margin of normal breast tissue. The pathologist is present to receive the specimen and proceeds at once with his examination. While awaiting his report the incision in the breast and skin is closed. If the pathological report is that of benign tumor, the operation is terminated. On the other hand, if the pathologist is confident, from the gross appearance and frozen section, that the tumor is definitely malignant, radical operation is carried out immediately. If, after studying the frozen sections, the pathologist is unable to give a definite opinion as to the nature of the tumor, it is advisable to delay further operative procedure until fixed or paraffin sections can be prepared and examined. In the meantime, the patient is kept in the hospital so that no time is lost in event the final diagnosis is carcinoma.

Although many types of tumors may occur in the female breast, the ones most frequently encountered are fibroadenoma, papilloma, cysts, localized cystic mastitis and carcinoma.

*Fibroadenoma*, or adenofibroma, is a common tumor, its name designating the predominant tissue present. These tumors may be single or multiple and occur most frequently in younger women. They may be located anywhere in the breast tissue, and are frequently painful, more so early in the menstrual cycle. Growth of the tumor is slow.

The physical findings are, as a rule, characteristic so that the term "slipping nodule" has often been used in describing the lesion since it moves freely in the breast tissue. It is smooth in outline, but sometimes lobulated. There is usually no nipple discharge. The axillary glands are not enlarged. Transillumination of the breast, if the tumor is in a superficial location, shows it to be circumscribed and its composition solid. This study is advisable since tense cystic tumors may be confused with fibroadenomas.

Biopsy should be by complete excision in this lesion. The tumor is firm in consistency, definitely encapsulated, and when incised the tumor tissue protrudes above the capsule.

While fibroadenomas are benign tumors, they may undergo malignant change. Harrington and Miller reported thirty-nine cases in which such a change took place.

*Papilloma* is a fairly common breast tumor, occurring most frequently in patients past the menopause. They are frequently multiple and often both breasts are involved. The most characteristic complaint is that of bloody discharge from the nipple. However, the presence of such secretion does not establish a diagnosis of papilloma, as other conditions may produce a similar fluid. A papilloma may bleed and the blood be retained in the duct as a result of obstruction to the duct by the tumor. Deaver and McFarland found that fifty per cent of papillomas produced a bloody discharge, twenty-five per cent a clear serous fluid, and the remainder were not accompanied by

any type of secretion. Pain is seldom present, as these tumors grow slowly and little intraductal pressure is produced. However, a sudden sharp pain may mark the onset of an intracystic hemorrhage. The tumors are usually small, are soft, and cannot be felt. Occasionally they may attain sufficient size to be palpated, and if this be the case the tumor is usually found in the ducts of the nipple, ampulla, or larger ducts beneath the areola. Pressure may elicit a point of tenderness or express secretion from the nipple. Transillumination will occasionally outline a large papilloma particularly if it is surrounded by blood. X-ray studies following the introduction of contrast media into the involved duct as described by Hicken seems to be the only method of accurately locating these small tumors.

All papillomas are to be considered potentially malignant, as they may in time give rise to papillary adenocarcinoma. For this reason excision of the lobule of the breast containing the tumor is indicated. In those cases where multiple papillomas are known to exist, removal of the entire breast is to be considered.

*Chronic cystic mastitis* is a common affliction of the female breast. The possible relationship between this condition and cancer is a highly controversial subject.

From the standpoint of differential diagnosis, chronic cystic mastitis may be considered as occurring in two forms: the circumscribed or localized and the diffuse. The localized lesions may appear as cysts or solid tumors of varying histologic nature.

The history of the disease may begin shortly after puberty, and the changes occurring in relation to menstruation, pregnancy, and lactation are known to favor the development of the disease. Tumors of this nature are found most frequently in women at or near the menopause. They are seen, however, in the breasts of patients from puberty to senility. Pain in one or both breasts is usually the first symptom to appear and is noted early in the menstrual cycle. This pain or soreness may persist in some degree between the periods. A serous discharge from the nipple may have



been noted by the patient prior to discovery of a lump.

Upon physical examination the lesion may be single or multiple, frequently involving both breasts. The tumor is usually not attached to the skin, but is not freely movable in the breast tissue. The breast is movable over the pectoral muscles. A serous discharge may be expressed from the nipple. The tumor is frequently tender. The axillary nodes are often palpable and tender. Transillumination may aid in differentiating the cystic from the more solid forms of localized mastitis.

When a localized tumor is regarded as fluctuant after palpation or cystic by transillumination, the diagnosis of a cyst can be established by recovery of fluid by aspiration. Air or other contrast media may then be injected and X-ray studies made. While this procedure may serve to distinguish between a simple cyst and a papillary cystadenoma, it seems that it is seldom indicated, as either lesion should be removed from the breast.

The diffuse type of chronic cystic mastitis usually involves the greater portion of both breasts, and on examination gives a sensation of induration or fibrosis, usually described as a "shotty" feeling, noted on palpation with the palm.

The clinical distinction between localized cystic mastitis and carcinoma of the breast may at times be difficult. Usually biopsy and pathologic examination are necessary. At operation the entire suspicious area should be removed wide of the lesion. Grossly, the tissue in chronic cystic mastitis is firm, grayish in appearance, and studded with cysts which may vary greatly in size and number.

Cancer is the most important tumor of the breast. In Harrington's series of more than 5,900 malignant neoplasms of the breast, 99.3 per cent were carcinoma; and of this number, ninety-eight per cent were classified as adenocarcinoma. It may be stated that a classification of cancer based upon histologic types is relatively unimportant from the clinical viewpoint, since all varieties have much in common and all are fatal if untreated.

The frequency of breast cancer, together with the unfavorable prognosis in well-advanced lesions, has served to stimulate our interest in breast tumors as a whole. In light of our present knowledge of cancer, a more favorable outlook in dealing with these tumors depends entirely upon their early recognition. Unfortunately, there are no classical signs or symptoms by which one may diagnose such a lesion and the findings, usually mentioned in this connection as dimpling of the skin, retraction of the nipple and fixation of the growth, are signs of advanced cancer.

The majority of women who come for examination and are found to have an early carcinoma will do so after having discovered a lump in the breast as a result of self-examination. Pain localized to the breast may be the first symptom of early malignancy in a small percentage of cases. A third group seek medical advice because of a discharge from the nipple.

A localized tumor is the most important clinical sign of early mammary carcinoma. It is so important that in its presence carcinoma must always be ruled out. If the tumor is solid, very hard, not particularly tender and unencapsulated, we are very suspicious of its nature. All such lesions should be considered malignant until found otherwise by exploration and pathological examination.

Carcinoma of the breast can often be diagnosed by the gross appearance of the excised tumor. The lesion is not encapsulated, it is hard, and on section presents a flat or concave surface. If a knife is drawn across the cut surface, a grating sound is produced. The cut surface is opaque and characteristic streaks are usually present. Microscopic examination should confirm the diagnosis.

A discussion of the treatment of carcinoma of the breast is not considered within the scope of this paper.

In conclusion, I would like to emphasize once again the importance of the establishment of a definite diagnosis of all breast lesions once they come under our observation.



## DISCUSSION

DR. BARNEY BROOKS (Nashville): Doctor Chumley has given an excellent summary of the more important methods of early diagnosis of neoplastic disease of the mammary gland. The purpose of my discussion is to re-emphasize some of the points he has made and to call attention to the importance of the subject he has discussed by referring very briefly to the results which we have obtained by following the methods he has emphasized.

The importance of early diagnosis of breast tumors is perhaps best illustrated by brief mention of a series of patients who have been treated in the Vanderbilt University Hospital during the past fifteen years, in which the present condition of all of the patients has been recently determined. In the first place, it is important to call attention to the fact that one-third of all the patients with carcinoma of the breast were those in which there was not any hope of cure at the time they were first seen. Furthermore, no patient in which radical operation has been undertaken and in which cancerous lymph nodes have been encountered during the course of operation has survived for as much as five years. Of those patients in which the operator did not encounter cancerous tissue during the course of operation, but in which metastases were found in the inferior lymph nodes of the axilla, 34.5 per cent are alive and well after periods of from one to fifteen years. In patients in which no cancer was encountered during the course of the operation and in which careful examination of the specimen after its removal cancer was not demonstrated beyond the limits of the mammary gland, 91.6 per cent are alive and well after periods of from one to fifteen years.

At the present time no patient more than thirty years of age with a lump in the breast is subjected to any operative procedure without the patient being entirely prepared for a radical operation for cancer. I would emphasize more than Doctor Chumley has done so the importance of the characteristic gross appearance of cancer at the time of exploratory incision in any instance in which doubt is entertained as to the malignancy of the lesion. We very seldom depend on the examination of a frozen section. I have never encountered a patient who has been cured of carcinoma of the breast in which the malignant tumor was first excised locally and a radical operation was done at a later date.

I believe the only possibility now existing of curing a patient with carcinoma of the breast is in instances in which an early diagnosis is made and an immediate wide removal of the skin, mammary gland, pectoral muscles, and axillary contents in one piece carried out. If the limits of the operative removal are decreased in instances in which early diagnosis is made, the results obtained in this group of cases are no better than after operative treatment in relatively late ones.

I have never encountered an instance in which radiation therapy has served any other than a palliative purpose.

DR. SHIELDS ABERNATHY (Memphis): Members of the Association: I wish to commend Doctor Chumley's contribution to the subject of tumors of the mammary gland. The problem of benign tumors of the breast is relatively simple, but the problem of the differential diagnosis of benign tumors and cancer and the problem of cancer itself present one of the most formidable challenges in medicine.

I am going to quote some statistical reports. I first want to congratulate Doctor Brooks on the figures that were just given here, as they certainly exceed anything I ever have seen. Statistical reports from the large tumor clinics all over the world are surprisingly uniform as to the five-year cures of mammary cancer. These reports show a seventy to seventy-two per cent five-year cure where the disease is confined to the breast, and we have to recognize that the surgeon is confronted, therefore, by a twenty-eight to thirty per cent handicap when he assumes the responsibility of a mammary carcinoma.

After forty-seven years of trial, the end results of surgical treatment do not appear to be materially improved, even in the most skillful hands. This serves to emphasize the gravity of the situation and the vital importance of early diagnosis. The methods of differential diagnosis as brought out by Doctor Chumley are all valuable in the appraisal of a breast tumor, but, after all, the court of final appeal is the microscopic histological study of the tumor tissue.

In our own work, during the past eight years, we have observed sufficient evidence to cause us to believe that there is considerable value in preoperative X-ray radiation of mammary cancer. Therefore, it is highly desirable to make a biopsy study of all suspected malignant tumors and clinically malignant tumors before any plan of treatment is outlined.

In carrying this out, we have found that the procuring of a biopsy by the Vim-Silberman punch has proven far more useful and practicable than aspiration biopsy.

Time does not permit discussion of these measures, but I wish to present six slides which, to my mind, are a beautiful demonstration of mammary carcinoma as procured by means of the Vim-Silberman biopsy punch. I would like to say just a word about this biopsy punch. It has a wider usage, I believe, for the reason that a sizable sliver of tissue can be obtained which is large enough for any good pathologist to cut and study. In the aspiration biopsies which have been perfected by Hayes Martin and his coworkers at Memorial Hospital, they claim ninety-five per cent accuracy in diagnosis. That could not possibly be obtained in a general hospital where the pathologist is not

trained in the study of aspirated cells. In other words, a man would have to be more of a cytologist than a pathologist.

In presenting these slides, I may say that two of them were taken by himself, two were taken by a fellow worker, and two were taken by an intern. It requires some dexterity and practice. However, this can be learned very readily. I wish to point out that a negative finding means nothing.

(Slide) This was taken by an intern in the hospital and shows very beautifully these nests of cancer cells distributed throughout the whole section, a typical Grade III or possibly plus adenocarcinoma of the breast.

(Slide) This is another slide showing various islands scattered all over the area, with more fibrous tissue element and bordering more on the scirrhus type of carcinoma. This was taken by an intern.

(Slide) You can see what a virulent type of growth this is. This was taken by another worker.

(Slide) This was taken by the same worker, still showing a very cellular element in this section.

(Slide) This is a very beautiful slide of a young woman in her thirties. The tumor was small. I was rather lucky to get this specimen. It shows what a malignant affair it is.

(Slide) This is on the same order.

DR. C. L. CHUMLEY (closing): I appreciate the discussion very much. What I was trying to put over was early diagnosis of lesions so early that you would not have to worry about what group they might fall into. Of course, we are all aware of the fact that if a carcinoma is diagnosed while it remains as a local lesion in the breast, the patient has a good chance of permanent cure.

The other point that I was trying to put over is that as a result of cancer education in the last few years, or as a result of the publicity that has been given to cancer, many patients come for examination early, and it is in the proper management of those patients that we will make a great many diagnoses of cancer early and thereby give the patients a good chance of permanent cure.

## SULFATHIAZOLE IN THE TREATMENT OF OTITIS MEDIA: REPORT ON THIRTY-TWO CASES\*

FRANK L. ALLOWAY, M.D., Kingsport

In an attempt to evaluate the comparative therapeutic effectiveness of sulfathiazole in the treatment of otitis media and mastoiditis I have used it in some thirty-two cases. Four where there was a distinct mastoid involvement and twenty-eight where there was a discharging ear. Of this twenty-eight, thirteen were chronic cases of some years standing, of which three had been operated upon. Fifteen were of acute nature.

With the introduction of sulfanilamide in the therapy of certain bacterial infections, a tremendous impetus was given to the interest of the medical profession in chemotherapy. Much of this interest centered in the therapeutic possibilities of the particular chemical structure represented by the various sulfanilamide compounds. Accordingly, numerous analogues were synthesized, of which sulfapyridine received wide recognition for its effectiveness in the treatment of pneumococcal infections.

More recently, an additional analogue, two-sulfanilylaminothiazole, was synthesized by Fosbinder and Walter, and Lott and Bergeim, to which the nonproprietary name "sulfathiazole" has been assigned. Laboratory investigations indicate that the acute toxicity of sulfathiazole (when administered parenterally as a sodium salt) is less than the corresponding sodium salt of sulfapyridine when administered in the same manner. It has been further shown that the chronic toxicity of sulfathiazole in mice was greater than that of sulfapyridine when these compounds were fed in the diets in concentrations of two per cent. However, in growing rats, sulfapyridine appeared more toxic than sulfathiazole and produced considerably more renal pathology than was noted in the case of sulfathiazole.

### CLINICAL INDICATIONS

Sulfathiazole is indicated in the treatment of otitis media, mastoiditis, pneumococcal

pneumonia, and in the treatment of large boils, carbuncles, diffuse staphylococcal cellulitis, lymphangitis or acute osteomyelitis. Sulfathiazole should not be used in the treatment of minor staphylococcal infections such as localized boils and small carbuncles or in mild furunculosis. It should not be used in the therapy of any type of meningitis because the drug does not pass over readily into the spinal fluid.

### DOSAGE

Sulfathiazole is poorly soluble and hence must be administered by the oral route.

In the treatment of otitis media in adults (patients over fourteen years of age), the initial dose of sulfathiazole should be four grams, to be followed by one gram every four hours for three days. The drug should then be discontinued.

In children, the initial dose should be based on 0.15 gram per kilogram (up to twenty-five kilograms body weight) and the total daily dose is calculated on the same basis. The total daily dose should be divided into four equal parts and administered at six-hour intervals for three days, after which the drug is withdrawn.

### PRECAUTIONS

Until the toxic manifestations of sulfathiazole have been more fully elucidated, it is advisable to proceed cautiously in the administration of this drug and close observation of the patient should be maintained. This is especially necessary in the cases of patients who have previously suffered toxic reaction in the course of therapy with sulfanilamide or sulfapyridine. Inasmuch as treatment with these compounds may result in dizziness and decreased mental alertness, persons who are receiving sulfathiazole should not drive automobiles or pilot airplanes, and should refrain from engaging in hazardous mechanical occupations or occupations such as engineering locomotives or piloting passenger steamers, where errors may cost many lives.

Reinhold, et al., have recently reported on the toxicity of sulfathiazole in human be-

\*Read before the Academy of Ophthalmology and Otolaryngology, Nashville, April 8, 1941.



ings. The following toxic manifestations may be noted during administration of the drug:

Nausea and vomiting may occur in some patients, but these reactions are distinctly less frequent and more mild than with sulfapyridine, and rarely necessitate cessation of therapy.

Headache, mental confusion and possibly toxic psychoses may occur occasionally.

Peripheral neuritis has been observed. Patients should be carefully and constantly observed for early manifestations, especially paresthesia, interference with muscular contractions, or pains which may appear to be of a neuritic origin.

Marked congestion of the conjunctivae and sclerae has been noted in association with an erythematous papular and nodular eruption generalized over the extremities and face and resembling the eruption of erythema nodosum. The ocular congestion may be preceded by burning and smarting of the eyes, and it appears that the reaction may be associated with photosensitization. Hence all patients receiving sulfathiazole should avoid exposure to the sun and to ultraviolet rays.

Renal complications are not infrequent. Hematuria has occurred in several cases; usually it has been mild, but in a few instances has been severe and the possibility of marked renal damage must be borne in mind. Urinary excretion and urea clearance are often temporarily diminished. Occasionally, the urinary output may be greatly decreased, even to the point of anuria with azotemia. The possible occurrence of renal complications necessitates regular and frequent examination of the urine to detect any early changes suggesting the need for special caution. The fluid intake should not be restricted and the urinary output should be about 1,500 c.c. in twenty-four hours. If there is any appreciable reduction of the urinary output below this level, it should be determined whether any evidence of kidney damage due to sulfathiazole therapy exists.

### RESULTS

One mastoid case had severe diabetes. Operation was considered too great a risk.

He cleared up in two weeks under sulfathiazole. Three mastoid cases operated upon, smears showed staphylococcic infection, cleared up in ten to twelve days.

Of the chronic discharging ears ten ceased discharging and the odor ceased. Three were improved but have had several recurrences that seem to be helped by the treatment.

Of the fifteen acute cases there was not one that showed mastoid involvement and all but one cleared up within two to three weeks. This one case has shown improvement following the removal of large infected tonsils, but still discharges at times. X-ray shows no involvement of the mastoid cells.

I think that in the use of sulfathiazole we have an effective therapeutic agent in the treatment of otitis media due to staphylococcic infection.

### DISCUSSION

GUY M. MANESS, M.D. (Nashville): There is no doubt but that chemotherapy is very valuable in the treatment of middle ear infections, and especially so in those with severe complications. My results of chemotherapy instituted immediately after incision of the membrana tympani for acute otitis media or at the onset of an acute pharyngitis or tonsillitis have not been very striking in reducing the severity or duration of the disease. It is probably the best plan to observe the patient for a few days to see if the infection will subside with ordinary methods of treatment and at the same time allow the patient to develop some natural immunity to the infection. Treatment with chemotherapy at this stage apparently is more effective. Realizing that sulfathiazole and related drugs are capable of causing serious complications much more grave than some of the original diseases they might be used for, I have more or less restricted their use to cases that I was fearful some complication might develop.

I would like to stress a few points which I think are of importance. It is necessary to use an adequate dosage of whatever drug used. Cases where a low concentration in the blood stream is maintained do not seem to get an adequate therapeutic response. As a matter of fact, in a great many cases where small amounts of the drug are used or those having intermittent therapy, the organisms apparently develop a resistance (drug fastness) to the drug so that further treatment becomes rather ineffective. Often the cases that are "drug fast" can be switched to other sulfanilamide derivatives with definite improvement. It is well to maintain the proper dosage until the infection has subsided because if the drug is withdrawn too

soon there is likely to be an exacerbation of the infection which may be very difficult to control. It is often extremely difficult to evaluate symptoms of patients who are receiving the drug.

Extreme vigilance is necessary with all patients receiving sulfanilamide or its derivatives. Serious complications are likely to arise with very little evidence of their existence. For some reason these drugs have not seemed to alter the number of serious complications (meningitis, brain abscess, lateral sinus thrombosis) of middle ear disease. As a matter of fact, I believe these complications have been more frequent since chemotherapy has been in use. Part of this may be due to inadequate dosage and also to discontinuing the drug too soon. There does, however, seem to be a very definite decrease in the number of acute surgical mastoids.

It is often extremely difficult to evaluate X-ray findings in patients receiving chemotherapy. Often a mastoid will show very little X-ray evidence of disease, while at operation there may be rather marked involvement of the mastoid cells. Often there is a drug fever which is associated with the use of sulfathiazole, sulfapyridine, or sulfanilamide. This fever usually does not arise until four or five days or more of treatment have elapsed. I have had one case in particular with acute mastoiditis and lateral sinus thrombosis, which, after operation on the mastoid, the lateral sinus, and ligation of the jugular vein, sulfathiazole was given. This case responded fairly favorable to surgery plus the drug therapy for a period of some

ten days and then began to run a septic temperature, the temperature rising as high as 106 degrees. This caused some alarm as to whether the septic temperature was due to infection or to drug fever. The drug was withdrawn and the temperature assumed a normal level within twenty-four hours and remained approximately normal thereafter.

I mentioned this because in patients with severe complications it is sometimes difficult to determine if the cause of the fever is due to the disease or to the drug. One hesitates to discontinue the use of the drug for fear of loss of ground in treatment of the disease. However, if the fever is due to the drug, it will usually subside within twenty-four to forty-eight hours after the drug is discontinued. Occasionally there may be a marked leucocytosis caused by the drug. The use of this group of drugs to cure conditions where there is an accumulation of pus without adequate drainage is extremely unsatisfactory. The use of the drug certainly has not eliminated the old surgical principle that where there is an accumulation of pus adequate drainage should be established if possible. While some cases of acute mastoiditis are undoubtedly cured by drug therapy alone, it is, unless there is a definite contraindication to operation, bad judgment to expect it to do so. Any case where there is evidence of bone destruction with accumulation of pus should have surgical intervention. Likewise cases of lateral sinus thrombosis, meningitis, etc., should have the original focus eliminated if possible.

# THE TREATMENT OF X-RAY AND RADIUM BURNS BY RADICAL EXCISION AND GRAFTING\*

BEVERLY DOUGLAS, M.D., Nashville

This subject is presented at this time because of a deep conviction that the essential factors necessary for a cure of this condition are not generally known. Lately one of our recent graduates now practicing in a small Kentucky town was in my office. He said that he knew of many cases of chronic ulcer of various parts of the body from X-ray or radium and that the consensus of opinion among the local practitioners was that they could never be cured by any means known but would need to come in for dressings the rest of their lives. He admitted that he was surprised to see two cured cases which happened to be here at the time and asked me to publish the results in my series so that he would have some means of convincing the practitioners in his neighborhood. No doubt the impression that this condition is hopeless has become so deeply rooted in the minds of the lay public and practitioners because, for years, the underlying causes of the ulceration have been ignored or, to express it in clear terms, most attempts have been aimed at "bracing the superstructure of the house when the foundation timbers were for the most part rotten."

## ETIOLOGY

The cause of these burns is an overexposure of the body surface. MacCallum, under whom I once studied, states that the action of Roentgen or X-rays and radium rays is very similar, the beta rays of the latter behaving like the cathode rays of Roentgen. Both are necrobiotic to living tissues and the effect is proportional to the quantity of X-ray energy absorbed. This may be readily expressed in quantitative terms but this is a matter too long for discussion in this brief report. Suffice it to say here that the burns appear only after a latent period of several days to two weeks and vary according to dosage from a non-painful erythema to deep indolent ulcers which untreated may last a lifetime. The

effect of repeated small doses is cumulative as demonstrated so often on the hands of radiologists. Since most radiology, diagnostic and therapeutic, is now controlled by quantitative methods, burns are of course much less common now than formerly. Nevertheless they will always exist through accident and the patients with old chronic ones have a life expectancy which will keep them with us a long time yet. One fallacy which makes the problem a rather complicated one is that mere healing of a chronic X-ray sore is often regarded as cure. Like some chronic leg ulcers, we should recognize at the outset that it is often easy enough to get a lesion healed but hard to provide tissue conditions which will keep it healed.

## METHOD OF PRODUCTION

The patients which we have treated fall into the following groups:

1. The first group comprises accidental burns of radiologists. These were fairly common with pioneer workers but are, of course, diminishing with greater knowledge and better technique. I am told by one physician, whose burns of the hand I show in the illustrations, that when he worked with his machine in the pioneer days the dose recommended was almost entirely guesswork. These men must be admired for the great service they rendered to radiology in pressing forward in spite of great odds to develop our knowledge in a difficult field.

2. The second group of cases I describe are those in which there has been an intentional massive dose or doses given with the purpose of stopping a deep lesion. One of these patients (Patient 4) had several such doses given over the sacral region for a supposedly malignant tumor of the sacrum.

3. A third group received repeated doses in the treatment of various skin lesions—eczema, ringworm, pruritus, psoriasis, naevi or keloidal scars.

Of each of these three types, I shall report cases.

4. One other group of cases of which I

\*From the Department of Surgery of Vanderbilt University.



have had none is mentioned—namely, patients who have accidentally been exposed too long during diagnostic procedures such as fluoroscopy.

It is well to note here that Hawkins (quoted by Sutton and Sutton) showed in 1931 in an experimental study that the skin reaction is altered and enhanced by the application of radiant heat preceding or following X-ray by twenty-four hours. Such local measures are to be avoided when X-ray is to be given. It is also to be noted that doses which are considered moderate may seriously injure persons whose skin contains little pigment.

#### LOCAL PATHOLOGICAL TISSUE CHANGES

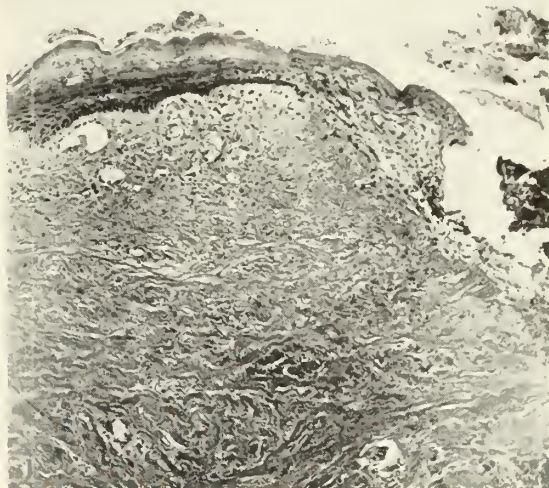
Pack and Davis<sup>1</sup> give a good review of the literature on tissue changes in the acute burns. As shown in their first illustration, there is a dilatation of all of the vessels of the corium or true skin as well as of the capillary network. The endothelium of the vessels swells to the point of rupture and hemorrhage in some, and of thrombosis in others. This seems to be the primary lesion but the injury to the nuclei affects the basal cells, causing degeneration. The protoplasm of some of the cells undergoes degeneration and becomes foamy.

As the vessels attempt to heal, we have the formation of telangiectatic capillaries in a perverted attempt to replace the old ones, and finally a sclerosis of the corium with atrophy and disappearance of the appendages, viz., hair follicles, sebaceous and sweat glands. Sutton feels that the pigment evoked by X-ray dermatitis is melanin.

These changes from a single massive dose may, of course, soon proceed to the production of ulceration. In some cases, a partial healing may occur with a breakdown of the area of diminished resistance after five to ten years with later ulcer formation.

In the more chronic lesions due to the smaller or often repeated doses, Wolbach found great hypertrophy of the epidermis everywhere except over foci of acute degeneration of the corium. In some areas this led to marked keratoses. In others, there were downgrowths in every way resembling

carcinoma, with or without invasion. These downgrowths were surrounded by zones of dense infiltration with lymphoid and plasma cells, eosinophiles and polymorphonuclear leucocytes. Figure 1 taken from MacCarthy gives one a good picture of the chronic changes that are the rule.



From "Histopathology of Skin Diseases,"  
by McCarthy.

Fig. 1.—Chronic X-ray dermatitis of third degree showing acanthosis and epithelial degeneration on edges of ulcer. Note also crust formation, hyperkeratosis, vascular degeneration, and marked sclerosis of derma; absence of appendages.

Carcinomatous changes in such cases may occur years after the original injury—in fact, this is the rule.

Summing up the histopathology of these lesions, acute and chronic, they may be said to represent a serious to fatal damage to the peripheral vascular supply to the skin, a peripheral endarteritis along with damage to most of the cells of the part. The epithelial cells, being the least susceptible, make a perverted attempt at healing which can only result in repeated breakdowns. It is for this reason that the foundations of the house are hopeless and that stable and permanent healing can only be accomplished by radical surgery.

#### CLINICAL PICTURE

Clinically speaking, the picture of acute gangrene of the skin is similar to that of gangrene from other causes except that there develops no sharp line of demarca-

<sup>1</sup>G. T. Pack and A. H. Davis, "Burns," Lippincott, 1930.

tion from the surrounding tissue. In these cases, operation must be delayed until the amount of tissue which will remain alive is apparent.

The form of lesion which we have seen most in our series is the chronic form following a slough which although clean will not heal because no granulation is present. The base may be adherent to bone as in one case and the edges show no power to heal. Around the edges pigmentation and telangiectases are seen and the edges are so hard that fissures form.

Another form shows superficial ulceration with fissures and cracks frequently forming in the hardened keratotic areas surrounding the ulcers. The patient will always complain of itching and of burning pain and at times these symptoms are present day and night and become unbearable. I shall not include a description of local applications for relief of symptoms and promotion of healing for this is in the field of the dermatologist.

#### INDICATIONS FOR OPERATION

In addition to the above symptoms, chronic recurrence, proof of malignancy, interference with function causing deformity and disturbance of facial appearance indicate radical treatment.

#### OPERATIVE TREATMENT

This consists in brief of (1) preliminary preparation of the field with Dakin's or some similar antiseptic; (2) excision of absolutely all of the damaged area extending deeply and peripherally to soft and only slightly pigmented skin; (3) supplying skin or skin and subcutaneous tissue by skin graft or pedicle flap either at the time of excision or three to five days later. In the excision, the scarred area will be evident, muscle and even the cortex of bone may be scarred and this must be removed. The reason for delaying the repair in certain cases is the presence of an unusual degree of infection which may be cleaned up easily after excision because of the excellent qualities possessed by the tissue bed left behind.

Following exactly this technique, the results in the cases treated have been good beyond all of our hopes when we started.

Once a foundation of tissues with vessels undamaged has been obtained, excellent takes of grafts or pedicle flaps may be expected.

#### CASE REPORTS

A few cases in our series which seem typical of the various types of lesions and their repair have been chosen for abstract.

*Case 1.* Seventy-four-year-old white woman had small area of denudation of skin of medial surfaces of both thighs due to obesity and perspiration twenty years ago. An itching condition began in these areas and the skin gradually thickened in one and a half years. At this time the areas were given X-ray therapy and both thighs blistered and ulcerated.

Ulcer on right healed but left has never completely healed in twenty years.

Treatment: Bland ointment, radium packs, boric acid packs.

October 12, 1938, entire ulcer-bearing area excised with considerable margin and edges stitched down.

October 15, 1938, small deep grafts. October 29, further grafts were applied from epigastrium.

Healed November 12. Returned several months later with fractured femur. At this time grafted area still healed.

*Case 2.* Sixty-five-year-old white female in good health until seven years ago. Had varicose veins present ten years, removed at that time, then noticed a red area beneath right knee. This itched greatly and on assumption it was eczema, she applied lotions for six months. Six years before admission this was treated by X-ray therapy. Ulcer grew larger and smaller but never healed entirely in several years. At time of admission, November 29, ulcers present below right knee.

Treatment: Excision by wide and deep margin out to good skin November 30. This included narrow bridge between ulcers. December 3, under novocain, about twenty and December 10 about thirty small deep grafts were applied. Area entirely healed in three weeks and has remained healed two years.

*Case 3.* A surgeon of sixty-two years exposed himself accidentally and repeatedly





Fig. 2.—*Left*, healed full thickness skin graft on finger five months after excision of area of chronic X-ray dermatitis. *Right*, early take of split skin graft on hand after wide excision of squamous cell epithelioma developing in area of chronic X-ray dermatitis. Hand, including finger, remaining healed three years after grafting.

to varying doses of X-ray many years ago when he started to do this work as one of the pioneers. He had been having keratoses, with slight ulceration since about two or three years after beginning X-ray. These frequently would heal and recur. Previous lesion excised in another clinic two years ago. Recurrence in scar two months after excision. Subsequent X-ray treatment. Ulcerated area on dorsum of left hand excised by wide margin to tendon sheaths. Pathological report squamous cell epithelioma. Split graft from right upper lateral arm August 1, 1938. (See Figure 2, right.) Healed uneventfully. Similar area on index finger similarly treated two months later and also healed. (See Figure 2, left.) During past three years patient has been using hand continuously in operative work. No recurrence.

*Case 4.* A white male of thirty-eight years had low back pain between the years 1924 and 1928. In 1928 an X-ray showed cystic disease of the sacrum. Received multiple X-ray treatments three years. Tumor area filled in with new bone. In 1934 a large saucer-shaped ulcer appeared over sacrum with telangiectases near ulcer.

November 20, 1934, deep excision of ulcer almost to bone. Circulation in center not good and ulcer remained infected. Cauterization with actual cautery February 1, 1935. Many deep skin grafts applied at different sittings. All healed September, 1935. Remained solidly healed last two

years. Contracted diabetes mellitus 1940. Undoubtedly due to this, has had small fissure at lower margin which at present is entirely healed.

*Case 5.* A nine-year-old white girl who was born with a large black mole of left supraorbital region extending to the midline of the forehead and upward to occupy most of the left frontal region of the scalp. At birth only black pigment was present but soon coarse black hairs grew out on the forehead. At age two had X-ray applied by a dermatologist over black area on forehead. This was of sufficient strength to kill the hair follicles. As patient grew older the frontal bone in the region of the X-ray application failed to develop and the forehead remained sunken, causing a transverse groove or depression about seven millimeters deep to form immediately above the left eyebrow. During the past few years she had had repeated applications of carbon dioxide snow and electric needle treatment.

Local examination of forehead shows a cicatrix occupying all of the left third and most of the middle third of the forehead extending from the eyebrow upward well into the scalp. Throughout this area streaks and spots of brownish black pigmentation alternate with white scar (see Figure 3, upper left). The scar is very thin and is adherent to the frontal bone. The whole left forehead appears to be sunken, the deepest depression (seven millimeters) forming a transverse groove immediately above the left eyebrow.

Diagnosis: Naevus pigmentosus of forehead and scalp; cicatrix of skin of scalp and frontal bone due to intentional burn with X-ray and carbon dioxide snow.

Plastic repair June 28, 1939. Under novocain-adrenalin analgesia, a large tube pedicle flap was formed on the left lower abdomen with the two ends attached. July 11, 1939, the lower end of the pedicle was attached to the dorsum of the left wrist (see Figure 3, lower left). July 26, 1939, the abdominal end of the pedicle flap was raised and the wrist elevated to the level of the left temporal region. The lateral third or temporal portion of the pigmented area was excised and the pedicle sutured



into the bed left by the excision. The position of the wrist near the left temporal region was maintained by a specially designed platform splint (see Figure 3, lower right).

August 11, 1939, under novocain the end of the flap was detached from the left wrist, the splint removed and the wound of the wrist closed. The portion of the flap previously tubed was opened up and flattened out. The lower portion was left thick to fill in the groove above the eyebrow. The upper portion was thinned out. The remaining cicatrix was dissected free from the forehead down to the periosteum. The edges of the flap were then trimmed to fit the raw area into which the flap was then sutured. The early result is shown in

Figure 3, upper middle and right. Result a year later very satisfactory. Scar inconspicuous, contour of left forehead symmetrical with normal side.

#### CONCLUSIONS

1. Lesions resulting from overexposure to X-ray and radium will rarely heal spontaneously when once they have become chronic, but frequently become malignant.
2. Unless the damaged tissues are entirely removed by wide surgical excision, recurrence is the rule.
3. A very high percentage of such lesions will be permanently cured by thorough excision followed by plastic repair with an appropriate skin graft or pedicle flap.
4. Several typical cases are reported in which this type of procedure was employed.



Fig. 3.—Excision of pigmented mole of forehead previously treated with X-ray followed by grafting of skin and subcutaneous fat by double transfer of pedicle tube-flap from abdomen to wrist to forehead. *Upper left*, partly pigmented skin adherent to periosteum. Bone depressed. *Upper middle and right*, early healed result showing improved contour of forehead from thick flap. *Lower left*, pedicle attached to wrist. *Lower right*, opposite end of pedicle transferred to forehead. Special designed steel platform splint to maintain position.

## THE DIAGNOSIS AND MANAGEMENT OF GOITERS\*

CECIL E. NEWELL, M.D., M.S. (Surg.), F.A.C.S., Chattanooga

In the last several decades great progress has been made with goiters. Previous to this, the anatomy and histology were well worked out, yet the physiology of the gland was little understood. In fact, it was not until 1915, when Kendall actually isolated thyroxin, that the true relationship of iodine to the thyroid gland was recognized.

Within this century the gross, but more particularly the microscopic, pathology of goiters has progressed. In spite of the numerous and bizarre degenerations which frequent old goiters, the modern pathologist is quite "at home" with thyroids. He readily recognizes the various types of goiters. The microscopical and clinical diagnoses now agree in from ninety to 100 per cent of cases. The pathologist greatly assists all concerned by finding or confirming the presence of neoplasms of the thyroid.

The classification of goiters, in spite of the persistence of a large number of different terms, has been reduced to distinct entities. There is no dispute over these entities—the controversy now is only one of terminology. The so-called "simple,"<sup>14</sup> "diffuse non-toxic,"<sup>3</sup> "colloid,"<sup>4</sup> or "adolescent goiter,"<sup>6</sup> no matter by which or all of those terms it is called, designates only one condition. The adenomatous goiter<sup>5</sup> "is readily recognized today, whether it be spoken of as an "adenoma of the thyroid" or a "nodular goiter."<sup>24</sup> Likewise, the fact that these goiters may become toxic is universally known. It little matters whether they then be called "adenomatous goiter with hyperthyroidism,"<sup>5</sup> "toxic adenoma,"<sup>4</sup> "nodular toxic goiter,"<sup>24</sup> or "adenomatous goiter with secondary hyperthyroidism."<sup>12</sup> No trouble is experienced in agreeing upon the "exophthalmic goiter,"<sup>13</sup> even if it should be referred to as "Graves' disease,"<sup>6</sup> "primary hyperthyroidism,"<sup>12</sup> "diffuse toxic goiter,"<sup>3</sup> "primary hyperplasia of the thyroid," "non-nodular toxic goiter,"<sup>24</sup> "Basedow's disease," or "primary thyrotoxicosis."

## DIAGNOSIS

But the greatest recent advances have been made in the diagnosis and treatment of goiters. The most marked strides in diagnosis has been along three lines. First, many of the substernal goiters that were previously missed are now picked up by fluoroscopic or radiographic means.<sup>15</sup> Second, refinement in diagnosis has been made possible by the development of accurate metabolic determinations and blood iodine estimation.<sup>18, 19, 20, 21</sup> With these aids, hyperthyroidism is now more readily recognized in its earlier stages. This allows surgery to be instituted before the appearance of visceral damage. The third advance, developed by clinicians and cardiologists, consists of the recognition of the hyperthyroidism when it is masked by the outstanding symptoms of a cardiac breakdown or of a thyroid origin.

The diagnosis of colloid goiter presents little difficulty to the medical profession. It is a smooth, diffuse, symmetrical enlargement of the thyroid gland without symptoms, occurring most often in young girls at puberty, occasionally during pregnancy, and rarely at the menopause. It is caused by a deficiency of iodine. Pathologically it is characterized by a distention of the acini with colloid. The basal metabolic rate is normal or slightly subnormal. If the goiter is very large and vascular, there may be thrills or bruits over the superior thyroid vessels.

The simple adenomatous goiter likewise offers little difficulty in detection. This goiter is usually asymmetrical and presents one or more nodular enlargements in the thyroid. It occurs most frequently in women but is also seen in men. (Figure 2.) The nodules may be encapsulated (Figure 3) and may be true tumors. Microscopically the tissue in these nodules may range from totally undifferentiated fetal cells, through fetal acini (Figure 5) to adult glands. The basal metabolic rate is normal or subnormal. This goiter produces no symptoms unless it be of such size or position as to encroach

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.





Fig. 2.—Large adenomatous goiter in a male.

upon the trachea<sup>16</sup> or press upon one or both recurrent laryngeal nerves. Occasionally hemorrhage into a degenerating adenoma will cause a sudden increase in size.

The adenomatous goiter with hyperthyroidism usually presents a clinical picture which is easily recognized if the hyperthyroidism is at all advanced. Besides the asymmetrical nodular enlargement due to the adenomata, there are numerous signs and symptoms present which can be artificially induced in the normal individual by the administration of thyroxin or desiccated thyroid and therefore attributed to the extra thyroxin manufactured in the adenomatous nodules. These include nervousness, weakness (particularly of the quadriceps muscles), heat intolerance (or better, increased tolerance to cold), palpitation, tachycardia, fine tremor, increased pulse pressure, increased appetite *with* loss of weight, increased sweating, increase in the basal metabolic rate, and a host of signs and symptoms of lesser frequency and significance.

According to H. S. Plummer, exophthalmic goiter is a definite and separate disease entity. In this condition, for some as yet unknown reason, the thyroid gland is stimulated into enlargement with increased as well as warped activity. The increased activity produces an excessive amount of

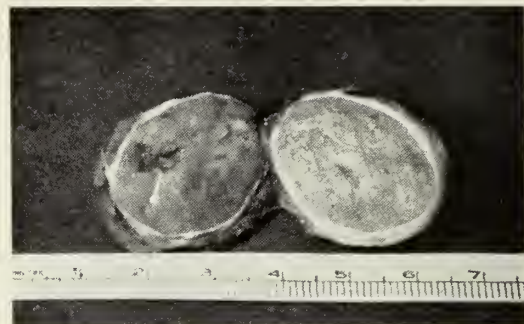


Fig. 3.—Single adenoma. Note thick capsule.

thyroxin and results in hyperthyroidism as seen in adenomatous goiter with hyperthyroidism. The warped activity produces some substance (possibly a faultily synthesized thyroxin defective in iodine) which gives rise to the *additional* clinical characteristics of exophthalmic goiter. These include:

1. The ocular signs such as exophthalmos, retraction of the upper eyelid which produces the characteristic stare, and excessive winking.
2. The characteristic psychic status and movements of extreme stimulation.
3. The gastrointestinal crises with diarrhea, vomiting, and prostration, and
4. The separation of the nails from their beds.

Microscopically the gland presents a diffuse hyperplasia and hypertrophy of the parenchyma. (Figure 7.)

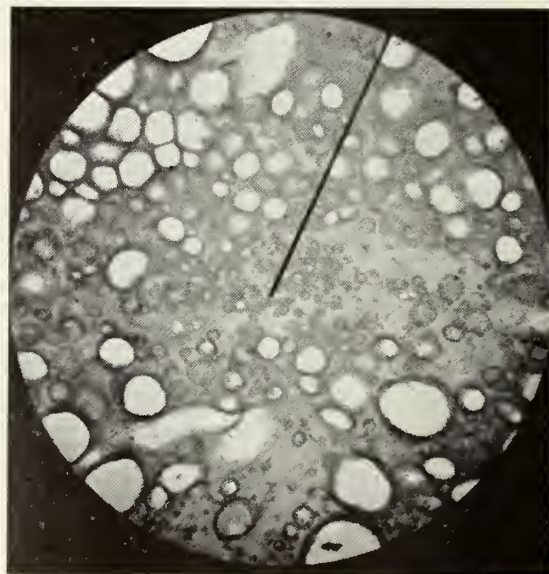


Fig. 5.—Fetal adenoma. Note varying stages of young acini. Microphoto. X 100.





Fig. 7.—Exophthalmic goiter. Note parenchymatous hypertrophy manifest by a thickening and infolding of the epithelium lining the acini. Microphoto. X 100.

The clinical diagnosis is based upon the finding of a relatively small symmetrically enlarged thyroid gland with the signs and symptoms of hyperthyroidism and the additional characteristics enumerated above. Of these, bilateral exophthalmos is the most common. If there is not an actual protrusion of the orbits, often an elevation of the upper lid is present, giving the appearance of a stare. In about forty per cent of the patients with exophthalmic goiter there is no exophthalmos.<sup>1</sup> In short, an exophthalmic goiter does not have to have exophthalmos; but if exophthalmos is present, it is so distinctive of this condition that when definitely present, it is of the utmost diagnostic significance.

The vascularity of the thyroid gland is increased in exophthalmic goiter. So much so that in about three-fourths of these cases bruits can be heard over the gland, particularly over the upper poles, and often a "thrill" can be felt when the superior thyroid arteries are palpated.

#### TREATMENT

With rarely an exception, the treatment of goiter is surgical. And probably in no other operation in the field of general surgery is there as much need for knowledge

and experience. Yet, with adequate preparation<sup>9</sup> and a properly executed operation, there is likely no other operation capable of restoring as much health as the subtotal thyroidectomy. Surgery of the thyroid is a pleasure to those who like it; and those who like it are usually the surgeons most familiar with it.

The management of the simple colloid goiter is medical, of all the other types it is surgical! For the small colloid goiter at puberty, all that is necessary is the controlled administration of small doses of iodine, or if the basal metabolism rate is low, small doses of desiccated thyroid. Colloid goiter in the adult is of more serious consequence, for, if it is large, it probably contains adenomas; hence, the safest procedure is to remove it surgically.

In adenomatous goiters operation should be advised because of:

1. The danger of developing a cancer.<sup>17</sup>
2. The frequency of the development of hyperthyroidism.
3. Occasional pressure symptoms.
4. Obvious cosmetic reasons.

When hyperthyroidism has developed in an adenomatous goiter, it is always considered a surgical disease. Subtotal thyroidectomy with a mortality of less than one per cent will give almost total assurance of a permanent cure of the condition.

The treatment of exophthalmic goiter has been reduced to a residue consisting of two measures: preparation and operation. In exophthalmic as in colloid goiter, iodine is efficacious, although it has been found to gradually lose its effectiveness after long continued administration except in some cases in which previous resection has been done. Its use should therefore generally be limited to preoperative preparation of the patient and to those in whom exophthalmic goiter recurs following operation.

Irradiation with either radium or X-ray<sup>22</sup> is partially effective as a therapeutic measure but its use is not attended with the success that some enthusiasts would have us believe. In those patients who are too poor a risk for surgery after adequate preparation, irradiation may be indicated.

Occasionally dual surgical conditions are present. In this case always resect the thyroid first especially if it is an exophthalmic goiter.

In the presence of hyperthyroidism, preoperative preparation consists of two cardinal points: rest and iodine. Both are best controlled in a hospital. Continued bed rest is weakening. For this reason the patient should be allowed up for limited activity. This is excluded if severe visceral damage is present. Even then operation should be postponed until such time as the patient can be safely allowed to be up. Iodine is best administered orally in the form of the compound tincture (Lugol's solution). The dosage should be adequate. This ranges from fifteen to 100 minims or more daily. Under ordinary circumstances thirty minims is sufficient. Supportive measures and a generous diet should be instituted. No definite amount of preparation can be stated, as the optimum response to preoperative therapy varies both with the severity of the hyperthyroidism and with the individual. Often a week to ten days is long enough. The response to iodine in patients with exophthalmic goiter will be more brilliant than in those with toxic adenoma.

Ligation of the superior thyroid arteries as preparation to resection is rarely necessary and should be reserved for those cases that are extremely poor operative risks.

A deep general anesthesia of any kind should be condemned in surgery of the thyroid. The safest is local novocaine infiltration. Preliminary sedation with barbiturates or opiates or both tends to quiet the already overstimulated patient. I commonly employ one and one-half grains of nembutal orally and one-fourth grain of morphine and 1/150 grain of atropine by hypodermic injection.

In all cases with hyperthyroidism, it is best to omit adrenalin from the novocaine solution for the added acceleration of the pulse rate and palpitation from its use may have a deleterious effect upon the already overstimulated patient.

Should the patient at any time become too restless or excitable, especially when ligating the upper pole or applying traction to the gland, light gas anesthesia, preferably

cyclopropane-oxygen, should be employed for a few minutes. Often gas analgesia suffices to quiet an obstreperous individual. Sometimes the psychic effect of the anesthesiologist merely holding the mask on the face without the administration of any gas will work wonders.

It is seldom necessary to divide the muscles. The capsule is incised and retracted from the gland by blunt dissection. This procedure lessens hemorrhage and moves the parathyroid glands from the operative field unless they are imbedded in the thyroid. In this case they should either be avoided<sup>25</sup> or excised and transplanted.

If an adenoma is single and encapsulated, enucleation is indicated. But in the majority of cases subtotal resection is the operation best suited to the case. This is made easier by elevating the lobe from its bed by traction on forceps grasping that part of the lobe to be excised. Elevation and mobilization aid in the ligation of the superior pole which should always precede resection. Ligation of the inferior thyroid artery is optional. Subtotal resection of the lobe is accomplished by excising a vertical wedge of gland, leaving small portions of the medial and lateral, and all of the posterior wall. When this is closed, the remaining mass should about equal the size of the distal two-thirds of the little finger. By thus saving the posterior shell of the lobe the likelihood of injuring the recurrent laryngeal nerve is lessened. Some surgeons needlessly dissect out the nerves.<sup>10</sup>

If the isthmus is enlarged it is divided over the trachea and each half is resected with the wedge. The patient should be made to talk and cough. If there is no evidence of injury to the nerve, the opposite lobe is likewise resected. Scott has urged a close scrutiny for retrotracheal projections and their removal if found.

Lobectomy is indicated occasionally in severe hyperthyroidism when the patient stands the first half of the operation poorly, and in those few cases in whom the opposite lobe is normal, or rarer still, is absent.

Care should always be made to close the platysma just below the skin to keep the scar from widening. It is best to drain if only for twenty-four hours as copious quan-



tities of bloody serum will form the first day or two.

Postoperative care consists for a few days of daily surgical dressings, an increase in the dosage of iodine, a semi-sitting posture on a back rest, the administration of adequate sedatives, and absolute rest and quiet. The iodine may be administered intravenously if it cannot be tolerated orally.<sup>2</sup> Food and activity should be encouraged early. A close scrutiny for complications should be maintained. Iodine therapy may be decreased several days after operation, but should be continued, particularly in cases of exophthalmic goiter, for three to twelve weeks.

Operative complications in the order of the frequency of their occurrence are: adherent scar, recurrent laryngeal nerve injuries, infection, postoperative hemorrhage, collapse of the trachea, parathyroid tetany and many more rarer ones. The time is too limited to discuss these unpleasant yet interesting accidents.

Adequate surgical resection of goiter gives excellent results in this disquieting and dangerous condition and the mortality should approximate one per cent. Recurrence of exophthalmic goiter develops in from three to five per cent of the cases,<sup>3</sup> whereas approximately 100 per cent of the patients with adenomatous goiters are permanently restored to good health by operation.

#### SUMMARY

1. The diagnosis of the different types of goiter is discussed.
2. Proper and adequate preoperative preparation of the patient is urged.
3. Some of the surgical considerations of the operation are described.
4. With better diagnosis and management results will more closely approximate the perfect.

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#### DISCUSSION

DR. N. S. SHOFNER (Nashville): Mr. Chairman and Ladies and Gentlemen: Doctor Newell has given us a very complete résumé of the present status of diagnosis and management of disease of the thyroid. Unfortunately, he said nothing with which I can violently disagree. It always adds spice to the program to have some disagreement, but this cannot be true in this case. On a few minor details I might debate with him.

The one point which is more or less of academic interest is merely the classification as to whether or not we should say toxic adenoma or exophthalmic goiter; whether they are distinct entities or one and the same disease is a very minor point.

I shall speak briefly to two points of Doctor Newell's paper which, in my opinion, are of great interest and are somewhat neglected. The first is the toxic goiter in the elderly patient who complains of cardiac symptoms. Quite often men and women, more commonly women (as Doctor Newell has said, this is a disease of both sexes), have this condition. It is more common in women about three to one. An elderly individual, therefore, usually a woman, will come to the internist complaining of palpitation, shortness of breath, weakness. Those are the outstanding complaints. Upon investigation, it may be elicited that she has been nervous, that she has lost weight, and perhaps that she has had a good appetite or even an increased appetite. On examination of the heart, there may be some signs of cardiac failure, but this is not, in many instances, due to cardiac disease primarily, but to the overstimulation by the increased production of thyroxin. Many of these patients are found, by careful examination, to have goiters which perhaps they had known to have existed for many years, maybe twenty or thirty years, or more, and they have never considered them of any significance. If these patients are carefully examined, including metabolism tests,

ordinarily there will be found a moderate increase in the metabolism, not the great increase that one finds in the young individual, perhaps plus twenty-five or plus thirty. It is extremely significant.

Those patients, no matter what the age, are dramatically relieved of their cardiac symptoms following a thyroidectomy.

Some of these glands are nodular; the majority of them are nodular; some of them are diffuse. That makes no difference.

At times you see a true exophthalmos in an elderly individual, but, as a general rule, that is not true, and perhaps for that reason the diagnosis is obscure.

It must be remembered that toxic goiter does exist over many, many years with a very low grade of toxicity, and then, as the patient reaches advanced years, the strain of this additional load of stimulation from the overactive thyroid produces a heart failure. It should never be overlooked. I am sure that the internists in this section are aware of that. I am quite sure that I have operated upon more patients with toxic goiter referred to me by the internists in the past few years, these patients having come to them with cardiac complaints. I am sure that such patients comprise the bulk of the thyroidectomies which I myself have operated upon.

The next point which I wish to elaborate upon is another one which Doctor Newell made, and that is the danger of the development of carcinoma in pre-existing nodules. That is a point which I think is of extreme importance. We are attacking the problem of cancer from all angles. You have had papers here in this meeting on cancer of many structures. It has been emphasized that a lump in the breast should be investigated, should have a biopsy, should be removed. The whole point of that discussion is to prevent cancer.

The same truth holds in regard to nodules in the thyroid. They are tumors and they should be removed—not biopsies made. Because they are present they have the possibility of becoming toxic, and they should be removed in order to prevent cancer. The only way, in my opinion, that we have advanced in recent years in the control of cancer is in the removal of pre-existing lesions which have the potentialities of becoming cancer. This is very emphatically true in regard to nodules of the thyroid.

DR. CECIL E. NEWELL (closing): I greatly appreciate the discussion and am certainly glad that Doctor Shofner stressed the development of carcinoma in adenomatous goiter.

## PRESENT-DAY METHODS IN TREATING URINARY TRACT INFECTIONS\*

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Our knowledge of urinary tract infections has increased markedly in the past few years. An entirely new group of drugs of great usefulness has been given us and chemotherapy has invaded the field of urology, as it has all other branches of medicine and surgery. Many drugs that were used routinely less than a decade ago are now known to be of little value as urinary antiseptics. The ketogenic diet and its modifications have largely been abandoned because of the difficulties and ill effects of their administration. The balsams, copaiba, sandalwood oil, cubebs, methylene blue, serenum, pyridium, caprokol, buchu, acriflavin, and the alkalies are fast disappearing into the limbo of forgotten drugs. Methenamine (urotropin) alone of the older remedies seems destined to have continued, but limited use. Neosalvarsan in persistent coccal infections in the urinary tract is still occasionally employed, often with beneficial results. No longer is it necessary or proper to treat these conditions according to the directions so glibly outlined by the average detail man who comes to see us, extolling the virtues of his product, for which he claims universal usefulness. As yet, there is no such thing as the ideal urinary antiseptic, that can concentrate in the urine in bactericidal strength, regardless of the kidney function or hydrogen-ion concentration in the urine. A hit-and-miss plan of direct therapy will fail in the majority of instances to do good and often will do harm. To prescribe alkalies, for example, to a patient whose urine is already alkaline because of the presence of urea-splitting organisms, has the effect of making it easier for the bacteria to flourish and promotes the formation of phosphatic calculi. Acidification of an already acid tuberculous urine but adds to the patient's suffering when bladder ulcers are present and shakes his confidence in medical treatment. It is now possible, with a small amount of equipment and an understanding of certain fundamentals, to

classify these patients intelligently and to choose the appropriate remedy according to the kind of bacteria and the underlying pathology that are present. With the information obtainable in the average office laboratory, the general practitioner can approach this problem with some certainty that a large proportion of his urinary infections will respond to his treatment. For those who do not improve promptly, it is but fair to the patient and best for the doctor's reputation to insist on a complete urologic study which will usually quickly reveal the reason for the failure and often will point the way to a cure. In the great majority of those who do not get well under simple treatment some form of obstruction with stasis is found; in others, the presence of tuberculosis is revealed. Every urologist can recall patients with advanced urinary tuberculosis, who had been treated for months with urinary antiseptics and other drugs by mouth, while the golden opportunity for a surgical cure slipped through the physician's hands. The vast majority of acute urinary infections in infants and children will respond to appropriate drug therapy, as the pediatricians well know. Those that persist or recur frequently deserve the same kind of urologic investigation and treatment as in adults, regardless of age or sex. With our modern instruments, such examinations offer no difficulties that cannot be overcome with complete safety to the child. Many pediatricians have adopted the rule to seek urologic study in any case of pyuria that resists therapy for as long as three weeks. The same can be said of the pyelitis of pregnancy, where the persistence of the infection in the upper urinary tract is both an obstructive and an endocrine problem. Marked dilatation of the ureters and kidney pelves, with loss of normal peristalsis, accompanies practically all pregnancies. Stasis is constant and infection frequently occurs, to the detriment of both mother and child. Often these patients do not respond to drug therapy because of the stagnation of urine in the upper urinary tract. A single catheterization of

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the ureters often turns the tide in the patient's favor and, if carefully done, carries no risk to either mother or child.

It has been known for a long time that the reaction of the urine is an important factor in the growth of bacteria in the urine. Rostoski, in 1898, first treated urinary infections by acidifying the urine. Alternate acidification and alkalization of the urine has been commonly employed, often with good results. In 1915, a chance observation by Anson Clark and his associates, who observed that diabetic urine containing ketone bodies remained sterile overnight in the laboratory, while normal urines became infected from standing, suggested the use of a diet rich in fats and low in carbohydrates as a means of producing ketosis and sterilizing infected urine. Modifications of Clark's ketogenic diet have been proposed by Nesbit, Higgins and others in an effort to avoid the objectionable nausea and the need for hospitalization in the original diet that many patients could not tolerate. Best results are sometimes still secured by combining a ketogenic or modified ketogenic diet with modern drug therapy, although they are not nearly so frequently used as formerly. They appear to possess some additional beneficial factor besides producing acidity, in the control of urinary infections.

Maslow studied 141 normal twenty-four-hour specimens of urine and gave the normal pH as being from 5.1 to 6.8, with an average of 6.02. The lowest pH recorded was in two cases by Yeaw in which the pH went to 4.5 on an acid-ash diet and ammonium mandelate. Mainzer says that 8.15 is the absolute upper normal limit. The pH varies normally during the day, being lower, or more acid in the morning. Certain drugs, which include salts of ammonia and various acids, are acidifiers and will lower the pH as will diets rich in fats, meat, and milk. Starvation will markedly lower the pH of the urine, as a part of an acidosis.

Certain bacteria produce characteristic changes in the pH of the urine. Low function prevents low pH. The salmonella group, often found present in alkaline encrusted cystitis, produce a marked elevation of the pH as high as 9.0. Coccal infections,

most of which are urea splitters, thereby liberating ammonia from the urea normally in the urine, give a pH that will range from 6.6 to 7.8. A pH of seven is neutral, above that being alkaline and below being acid. Bacillary infections have a comparatively low pH, ranging from 5.2 to 6. The pH in sterile urine is quite constant but bacterial contamination causes it to fluctuate markedly. Yeaw has shown that the change occurs at pH levels where the particular organism shows the best growth and the amount of change is roughly proportional to the amount of bacteria in the specimen. Yeaw concludes that it is possible to kill only streptococcus hemolyticus and streptococcus viridans by the pH levels obtainable by drug therapy, but that all other bacterial growth in urine, except that of escherichia coli and aerobacter aerogenes, can be held in a state of stasis; it being possible therefore to render urine bacteriostatic for all organisms except the two mentioned.

Following Clark's reports, workers began to search for an acid that would be excreted in the urine unchanged. Rosenheim recalled that mandelic acid fitted this requirement and was the first to employ it for this purpose. It produces gastric distress in about fifteen per cent of the patients and for that reason, the calcium and ammonium salts of the drug and the elixir and syrup are used because they cause less disturbance. Mandelic acid should never be given when there is marked impairment of renal function. If, when it is used, the pH does not go to 5.5, ammonium chloride or some other acidifier should be added. One hundred eighty grains daily of mandelic acid may be given to an adult with good kidney function. The drug should not be continued longer than ten days without interruption and a rest period of five or six days before resuming it. It is practically impossible to lower the pH in the presence of poor kidney function. One of the best means we have of lowering the pH in urinary infections is to prescribe from four to six bottles daily of a popular cola drink used widely throughout the South, and made in Atlanta.

Sulfanilamide, sulfapyridine, sulfamethylthiazole, sulfathiazole and sulfanilyl-sulfan-



ilamide constitute the sulfonamide group of drugs as we use them today.

Sulfanilamide is ineffective against streptococcus fecalis. It is less effective against bacillary organisms, but these respond to mandelic acid. Both mandelic and sulfathiazole are bactericidal for streptococcus fecalis.

Both sulfamethylthiazole and sulfathiazole are more effective against staphylococci in the urine than sulfanilamide. Sulfamethylthiazole has been withdrawn from the market because of the number of cases of peripheral neuritis that followed its use.

Sulfathiazole seems more effective in smaller doses and is less toxic than sulfanilamide. Recent reports by Helmholz indicate that sulfathiazole is bactericidal for the following organisms:

*Pseudomonas aeruginosa* (Bacillus pyocyaneus). Produces green pus. Is a long, heavy, blunt-end organism. Culture is green. Gram negative.

*Streptococcus fecalis*. Diamond shape with a halo of protoplasm. Pairs and short chains. Gram positive.

*Escherichia coli*. Gram negative. Nonmotile. Usually small. Grows profusely.

*Aerobacter aerogenes*. Bacillus motile or nonmotile. Gram negative.

*Proteus ammoniae*. Short rods. Motile. Gram negative.

*Staphylococcus aureus*. Gram positive.

These are six of the most common bacteria found in the urine. The salmonella group (Colon typhoid group) all negative, all motile. Colon bacilli are frequently nonmotile and all are gram negative.

Our experience with sulfathiazole in the treatment of gonorrhea is most encouraging. Failures are less frequent than with sulfanilamide and a number of cases that have failed to be cured with sulfanilamide have responded promptly to smaller doses of sulfathiazole with less evidence of toxicity. Ballenger's reports on the beneficial effects of combining the sulfanilamide with fever therapy hold great promise for cure in stubborn cases.

We have discontinued the use of sulapyridine because of the tendency to form calculi in the kidneys. Complete anuria with

the ureters filled with crystals has occurred. This condition requires immediate discontinuance of the drug, large amount of fluids by mouth, and ureteral catheterization and lavage with normal saline. If, when a patient presents himself for examination, one follows this more or less fixed plan of examining him and keeps the following facts in mind, he will be greatly aided in arriving at a decision as to what type of infection is present and what remedy is to be applied.

1. Examine the external genitals and note whether or not nodules are present in the epididymis and the testes, and feel the scrotal portion of the vas for evidence of beading suggesting tuberculosis.
2. If a urethral discharge is present, make two smears.
  - (a) Methylene blue.
  - (b) Gram stain.
3. Have patient void in two glasses. First glass represents urethral contents and second glass represents bladder urine.
4. Centrifuge portion of the second glass and while this is swinging take the pH of urine and test it for albumen and sugar. Examine the urine sediment as a wet drop and note the presence or absence of bacteria, whether motile or nonmotile; pus, blood, casts, crystals, and epithelial cells should be recognized, if present. Make a methylene blue stain and a gram stain of the urine sediment if any abnormal constituents have been observed in the wet drop. If pus is seen in an acid urine and no organisms noted, it suggests a possible urinary tuberculosis. In which case, the urine should be centrifuged at high speed (2,400 revolutions per minute) and the sediment stained with Ziehl-Neelsen and a search made for acid-fast bacilli.
5. The prostate and seminal vesicles should be palpated and unless acutely inflamed the secretions should be expressed by massage. A wet drop mount, a gram stain and a culture should be made if the secretions contain pus. Nodules in the prostate and seminal vesicles demand attention and it must be determined whether or not they are inflammatory, tuberculous, or malignant. Fluctuation in the prostate, especially during the course of

acute gonorrhea, means abscess and should be treated by prompt drainage, preferably by exposing the under surface of the prostate through the perineum and making lateral vertical incisions in the capsule, one on either side of the mid-line. A small strip of rubber tissue is fixed to each lip of the incision in the capsule for drainage.

Blood cells in the urine without pus and with no albumen or casts suggest (a) tumor or (b) stone. With albumen and casts, nephritis. Blood cells with pus and no bacteria, especially when the urine is acid, suggest urinary tuberculosis. Blood and pus cells and pyogenic bacteria in the absence of evidence of lower urinary tract infection, especially when associated with fever, chills, and lumbar pain, mean acute pyelonephritis or pyelocystitis. Pus and pyogenic bacteria associated with frequency of urination, marked tenesmus and terminal bleeding, when occurring during an acute gonorrheal infection, means acute posterior urethritis, prostatitis, and vesiculitis. Tumors, stones, and ulcers in the bladder and obstruction at the bladder neck often produce pus and bacteria in the urine, associated with disturbed urinary function. Lesions in the urethra anterior to the triangular ligament show evidence of their presence in the first glass only, when the two-glass test is made.

Every patient with gross hematuria should be promptly cystoscoped, preferably while bleeding. A throbbing, pulsating pain in the rectum, with fever, chills, sweats, leucocytosis and difficult urination, usually means prostatic abscess. Fluctuation demands surgical drainage.

A strongly alkaline urine with gram positive cocci should have one of the sulfonamides, preferably sulfathiazole. Pyuria associated with gram negative bacilli and with motile rods in a slightly acid urine usually do well on mandelic.

The streptococcus fecalis can be recognized in a methylene blue stain by its diamond shape and a halo of protoplasm surrounding it. Both mandelic and sulfathiazole will eradicate it. Sulfanilamide will not.

*Escherichia coli* is the most frequent cause of urinary infection. Sulfathiazole eradicates.

If an X-ray can be made, a plain K. U. B. film often gives valuable information. If the trouble appears to be in the upper urinary tract from the above examination, an intravenous pyelogram in both the supine and the upright postures will often greatly aid the physician in detecting the lesions responsible for a failure to promptly eradicate infection.

The above outline is all within the scope of the general practitioner. Any additional investigation that involves cystoscopy, ureteral catheterization, collection of separate specimens of urine from the two kidneys, differential functional tests and pyeloureterograms, both in the supine and standing postures, are diagnostic measures that should be undertaken only by a trained urologist.

#### DISCUSSION

DR. B. C. ARNOLD (Jackson): I want to emphasize the fact that whenever a patient reports for urinary infection it is best to make a complete urological checkup before giving very much treatment because so many times local treatments will not give the patient any relief until you have found out the definite pathological cause.

In the acute stage the urinary infections usually manifest themselves with symptoms of fever and pyuria, while in the chronic state they may be accidental findings. Stasis in the urinary passage that is sufficient to cause marked reduction of renal function may be present for years without infection. Therefore, a primary infection may be associated with permanent injury of the kidney.

My experience has taught me that one should not start treating a patient for urinary infection until one is certain that an infection is present in the urinary passages. If urinary infection is present, it is important to know what type or types of bacteria are causing it. I use two procedures to ascertain this information: (1) a gram stain on the sediment from centrifuged urine, and (2) a culture of the urine. Before bacteria can be treated properly, the definite infecting organism must be recognized and then the treatment that is specific for removing that bacteria should be started. There are a number of recognized treatments for infections of the urinary tract, but since my time is limited I should like to report a case that I treated recently where the patient made a complete and rapid recovery.

A white woman, Mrs. E. F. C., forty-five years old, reported to me first in August, 1940. For the past one and one-half years she had been ill. Her



menstruation had been irregular; she had suffered with hot flashes and vertigo. During all this time she had occasional headaches and suffered severely with pains in her back, over left ovary, and in her bladder. She stated that micturition was so painful at times she would be forced to go to bed.

She had the usual diseases of childhood, malarial fever about two years past and had hard chills every day. Kidney trouble for several years, bladder trouble for one and one-half years. No operations. She gave history of her mother dying at the age of sixty-five and her father dying at the age of sixty-six with pneumonia. She has three brothers and two sisters living, all in good health.

I made cystoscopic examination. Used a No. 21 cystoscope and had no trouble passing cystoscope through the urethra into the bladder. Found the trigone of bladder and internal meatus of the urethra very irritated. Bullous edema all over trigone and each ureteral opening irritated. I had to give indigo carmine intravenously before I could locate the ureteral openings. The indigo carmine appeared in the left kidney in about six minutes and appeared in the right kidney in about seven minutes with good concentration of each kidney, indicating good kidney function. I had no trouble passing a No. 4 catheter up to each kidney pelvis and collected specimens from each kidney and irrigated each kidney with 1/5000 neutral acriflavine solution and instilled acriflavine in the bladder. I gave her prescriptions for syrup amdelate and ammonium chloride tablets and put her on a ketogenic diet.

Routine urinalysis and blood studies revealed nothing abnormal except the bladder specimen contained ten to twenty pus cells. The Wassermann reaction was negative. Kidney specimens were negative. The blood sugar was 110 milligrams in 100 cubic centimeters of blood, creatinine 1.5 milligrams in 100 cubic centimeters of blood. Cultures from the right and left kidney specimens were negative for growth of any kind.

On August 5, 1940, patient reported to my office again. Under novocaine anesthesia I introduced a McCarthy panendoscope into the bladder and found the lesions in posterior urethra and neck of bladder over trigone of bladder. I applied phenol fifty per cent in glycerine and applied ten per cent silver nitrate to the lesions. I advised these topical applications about once a week until this trouble clears up in neck of bladder and posterior urethra. Patient reported back for these treatments August 15, August 22, August 30, September 6, and September 20, and I gave her the last treatment October 4, at which time she had completely recovered.

## URINE

Date 8-1-40	B.	L. K.	R. K.	10-4-40
How obtained	Cath.	Cath.	Cath.	Cath.
Amount, single	v	v	v	v
Color	Amber	Amber	Amber	Amber
Appearance	Clear	Clear	Clear	Clear
Reaction	Acid	Acid	Acid	Acid
Specific gravity	1.018	1. Q.	1. Q.	1.020
Albumin	Neg.	Neg.	Neg.	Neg.
Sugar	Neg.	Neg.	Neg.	Neg.
Crystals	Occ.	Occ.	Occ.	Neg.
Casts	Neg.	Neg.	Neg.	Neg.
Epithelium	Occ.	Occ.	Occ.	Occ.
Pus cells	10-20	Neg.	Neg.	Neg.
Blood	Occ.	Neg.	Neg.	Neg.

Special gram stain was negative for organisms.

Cultures from the right and left kidney specimens were negative for growth of any kind.

## BLOOD

Blood sugar 110 mgs./100 c. c. blood.

Creatinine 1.5 mgs./100 c. c. blood.

DR. BURNETT WRIGHT (closing): Mr. Chairman, I am very grateful to Doctor Arnold for his discussion. I am not sure that I am entirely in accord with his recommendation that one should always do a complete urological study before attempting to treat these patients with pyuria, and it was my purpose to try to outline to you a simple, practical means of dealing with urinary tract infections as they present themselves to you in your daily work in such a manner that you would have a reasonably good possibility of relieving them without subjecting all of these patients to the expense and inconvenience and sometimes distress of this most dreaded of all investigative procedures, cystoscopy. When a patient presents himself with pus in the urine, if one will think along these lines, he will oftentimes find the way toward a simple and comparatively inexpensive and reasonably comfortable cure. Ask yourself: Is the condition acute, chronic, or recurrent? Is it tuberculous? Is it venereal? Is it a nonspecific and nontuberculous pyogenic infection? Is it associated with obstruction and stasis? Are stones present? Is the condition confined to the lower urinary tract or the upper urinary tract, or both? If in the upper urinary tract, is it unilateral or bilateral? What is the pH or hydrogen-ion concentration of the urine? I think there is nothing that can give us quite the accurate information about that and the relationship that exists between bacterial growth and the reaction of the urine as will the LaMotte indicator. Certainly the old red and blue litmus paper cannot be depended upon if we are going to try to identify our bacteria intelligently.

Is albumin present? Are motile or nonmotile bacteria seen in a wet drop? Are the pus cells clumped, which is indicative, in a measure, of the degree and activity of the infection? Are the organisms bacilli or cocci? If they are bacilli, are they acid fast? Are they gram negative or gram positive? If they are acid fast, has smegma been excluded, and are there lesions in the epididymis,

prostate, or seminal vesicles, suggesting genital tuberculosis?

If we will learn to think along these lines more or less automatically as we make our examination in the manner in which I have described, we will get away from this haphazard, hit-or-miss plan of therapy which is so confusing to the average practitioner.



# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of  
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### THE AMA NEEDS A NEW CHARTER

By the kind permission of the *Chicago Tribune*, the following editorial is reproduced:

"The American Medical Association and its local society in Washington, D. C., have been convicted by a federal jury of violating the antitrust law. At the same time the jury acquitted all of the individual defendants, who included the principal executive employees of the association.

"This verdict had a parallel some months ago in the federal court at South Bend, where the General Motors Corporation was convicted of violating the antitrust laws in financing the sale of its cars, but all of the officers of the corporation were acquitted. This, as it turned out, was most fortunate for Mr. Roosevelt. It saved him the embarrassment of plucking one of the defend-

ants, Mr. Knudsen, out of jail when he needed him to head OPM.

"The jurors seem to have been in no doubt that a crime was committed, yet when they were asked to say who committed it their answer was, 'Nobody.' Perhaps the legal metaphysicians can straighten us out. Queries might well be addressed to the prosecutor of the case, Mr. Thurman Arnold, who has written that antitrust prosecutions are a sham anyway, being designed to propitiate the public conscience for allowing acts that our moral sense tells us are wrong, but which our practical judgment says are necessary.

"The charge against the doctors at Washington was that they engaged in a conspiracy in restraint of trade against the Group Health Association, an organization that undertook to furnish government employees with medical care in return for a flat monthly fee. The AMA asserts that arrangements of this type tend to lower the standards of medical care, and in consequence its members, at the instigation of the association's leaders, refused to have any professional relations with the physicians hired by the group health organization.

"The antitrust conviction may impress upon the members of the AMA that when they organized they took out the wrong kind of a charter. They should have applied to William Green or John L. Lewis. So equipped, they would not have been reduced to refusing to practice in the same hospitals with a physician who signed up with Group Health. Dr. Morris Fishbein could just have gone around some evening and broken the wrong guy's fingers with a blackjack, an operation that does a surgeon no more good than it does a musician, and Mr. Justice Frankfurter would have told Thurman Arnold not to get himself all wrought up over a passing moment of animal exuberance.

"A good, broad AFL or CIO charter would solve a lot of the medical profession's economic problems. Its members would not have to worry about overproduction of doctors. They could just close their membership rolls and have some of their

members, sitting on the state and local examining boards, prosecute the newcomers for practicing without a license.

"Draft boards wouldn't be asking physicians to give their services free for examination of the draftees. All the chest thumping in charity wards would be done at the union scale and any nonunion medico who tried to cut in on the business would have to pay \$1,000 initiation fee. Ladies expecting offspring would have to be careful that the labor pains did not start after 4:00 P.M. on a Friday; otherwise papa would have to pay double time for a week-end delivery.

"The medical union might be able to take on a number of profitable activities that AMA members now deny themselves, such as performing abortions or, for a suitable fee, slipping a dose from the black bottle to millionaires whose heirs were growing impatient. While such activities might arouse public protest, the union docs could be sure that President Green would not bother them. That would be interfering with their autonomy."

#### THE REJECTED DRAFTEES

Something happens now and then to bring to mind the old saw "there are lies, damn lies, and statistics."

There has been a great deal of publicity recently with reference to the number of draftees rejected for military service.

Statistics cited to show that the number of rejectees is greater than was the case in World War No. 1. The attempt is made to make the point that these figures indicate there is something radically wrong with our system of medical care and that something radical should be done about it. Here are some of the facts:

First, a different physical standard applies today from that which applied in 1917 and 1918.

In 1917 men were admitted to the Army with hernias. They were then ordered to be operated for hernia. If they refused, they were court-martialed for disobeying orders. Today hernia is a cause for rejection.

Men with venereal diseases were admitted in 1917. Today in a large per cent of instances they are rejected.

In this connection it might be mentioned that an examiner for a draft board some days ago made the point that he had seen some registrants who apparently had contracted a venereal disease, knowing it would be a cause for rejection.

Men who have been convicted of crime are rejected for military service, and these are classed as rejections for a medical cause today. This was not true in 1917 and 1918.

These facts will suffice to show how erroneous and ridiculous it is to compare the figures for 1917 and 1918 with figures for 1940 and 1941 and draw such conclusions from them.

It will be well if the public did not give too much credence to these propaganda agencies who pounce upon every item of information which may be twisted and used to make the point that a radical change in medical practice should be brought about.

It must be remembered that civilian doctors have no power to compel a patient to be operated on, nor to take medicine, nor is any agency of the federal government exercising any such compulsion in so far as we know. But these facts are never taken into account when the propagandist hits his stride.

There are adequate facilities for the correction of every hernia in the United States. The fact that they are not all operated on is no proof that the facilities and the skill do not exist.

It is appropriate to make the point now that the medical profession has entered wholeheartedly into this program of medical preparedness.

This is no time for communistic agitators to be turned loose with half-baked figures and conclusions.

We are perfectly aware that there are those who would take advantage of the present emergency to create sentiment in favor of a communistic form of practice.

The medical profession and especially the public should beware of all such agitations at this moment.



## MEDICAL PREPAREDNESS

It has been a year now since the American Medical Association created a committee on medical preparedness.

One of the functions of the committee is to see to it that rural areas are not denuded of doctors. Another duty is to cooperate in securing a sufficient number of doctors to meet the needs of the Army and Navy.

An enormous amount of information has been accumulated during the year. It is obvious that there is a sufficient medical personnel to meet the needs of the Army and Navy and the civilian population, provided sound policies are followed.

It is obvious that a doctor who is serving the needs of a civilian community should not be called to military service if such call would work a hardship on that community.

It is reported that a relatively large number of doctors have been called from some rural areas and that a loud outcry has resulted.

It has been suggested that the United States Public Health Service be supplied with money and personnel with which to meet these civilian needs where emergencies exist.

We can think of nothing more ridiculous than that of creating an emergency by calling into Army service a doctor who should be left at home and then endow another department of the government with money and power to correct the conditions thus created. The emergency should not be created in the first place.

It is common knowledge that the ratio of doctors to the civilian population is not uniform throughout the country. The ratio of doctors is much higher in cities and towns. It is much lower in small towns and rural areas.

It is commonly recognized also that a sufficient number of doctors can be drawn from the cities and towns to meet the needs of the Army without disturbing the doctors located in these small towns and rural areas.

In this connection it is worth remembering that in recent years the United States Public Health Service has displayed a strong disposition to take over the practice of medicine as one of its functions as dis-

tinguished from a truly public health function. Certainly this emergency furnishes no excuse for the establishment of a communistic form of medical practice, even in limited areas.

If the doctor volunteers his services to the Army in order to make a fight for the defense of democracy and then returns to find democracy gone from his particular area, he would have genuine cause for disillusionment.

It is perfectly obvious there are many persons and agencies in the United States at the present time anxious to use the present emergency as an excuse for the establishment of a communistic form of medical practice.

The medical profession has been opposed to communism in any form. We are opposed to it as a philosophy and we are certainly opposed to the idea of using the present emergency as an excuse for the adoption of a system of practice which is repugnant to the whole idea of democracy.

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\*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY

Clarence W. Asling	Nashville
H. M. Ausherman	Chattanooga
A. L. Ball	Memphis
Basil T. Bennett, Jr.	Trenton
Philip B. Bleecker	Memphis
James B. Bodie	Nashville
H. O. Bolling	Kingsport
L. M. Bowen	Waverly
James T. Boykin	Lewisburg
Frank S. Brannen	Chattanooga
D. L. Brint	Bolivar
C. H. Brown	Jackson
Colin F. Vorder Bruegge	Memphis
O. C. Bruton	Nashville
M. T. Bryan	Memphis
Edward F. Buchner	Chattanooga
H. M. Burkett	Memphis
Edward S. Cardwell, Jr.	Memphis
Harvey W. Carter	Murfreesboro
John M. Chambers	Memphis
N. J. Chew	Bristol
O. H. Coleman	Jacksboro
Albert L. Cooper	Chapel Hill
Miles S. Crowder	Jefferson City
Rollin A. Daniel, Jr.	Nashville
Robert M. Darnall	Union City

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\*Based on information published in *Journal of the American Medical Association*.

Charles W. Davis, Jr.	Humboldt	James B. Phillips, Jr.	Chattanooga
John W. Dicoct	Paris	Walter A. Phillips	Arlington
Julius Dietrich	Crossville	Edward V. Pollard	Parsons
Geo. D. Dodson, Jr.	Chattanooga	Wm. G. Preas	Johnson City
Horton G. Dubard	Knoxville	Samuel B. Prevo	Memphis
E. E. Edwards, Jr.	Bells	E. K. Provost	Nashville
Jos. D. Egleston, Jr.	Old Hickory	William E. Ragsdale, Jr.	Memphis
J. C. Eldridge	Chattanooga	Hugh R. Raines	Memphis
E. W. Ellis	Knoxville	Wm. T. Rainey	Tiptonville
John W. Evans, Jr.	Bells	Lewis C. Ramsay	Memphis
Loyall D. Farragut	Jonesboro	Russell B. Ray	Memphis
Taylor Farrar	Shelbyville	G. C. Richardson	Bristol
Roscoe Faulkner	Trenton	B. C. Rogers	Nashville
Benny Fendler	Memphis	James S. Ruffin, Jr.	Knoxville
S. F. Fowler	Nashville	Alexander F. Russell	Dover
Arthur W. Green	Memphis	Edward C. Segerson	Memphis
Daniel M. Green	Memphis	Ewing Seligman	Nashville
Thomas Grizzard	Goodlettsville	Geo. W. Shelton	Manchester
James B. Hall	Gainesboro	Harrison J. Shull	Shelbyville
James T. Hall	Memphis	Phillip D. Smith	Knoxville
R. M. Harvey	Erwin	Arthur A. Sparkman	Jackson
Jos. C. Hayward	Chattanooga	Oscar B. Stegall	Memphis
Homer Head, Jr.	Chattanooga	William A. Stem	Chattanooga
Blondy S. Henry	Memphis	S. L. Stephenson, Jr.	Savannah
Geo. K. Henshall, Jr.	Chattanooga	Williams D. Steward	Ooltewah
Geo. C. Henson	Knoxville	F. J. Strohenger	Kingsport
Henry H. Herron	Bemis	Guy F. Taylor	Laurel Springs
Douglas F. Heurer, Jr.	Memphis	H. H. Taylor	Cookeville
Otho R. Hill	Lebanon	Geo. W. Tharp, Jr.	Knoxville
Irving R. Hillard	Jackson	John B. Varner	Memphis
John L. Van Hooser	Smithville	Lowell E. Vinsant	Knoxville
John L. Houston	Memphis	John B. Warren	Piney Flats
William T. Howard	Covington	James E. Watson	Memphis
Geo. B. Hubbard	Nashville	Thomas S. Weaver	Nashville
Fred E. Hufstедler	Lenoir City	Jacob Weinberger	Jamestown
Walter C. Humbert	Erwin	Robert L. Whitfield, Jr.	Jamestown
Vernon Hutton, Jr.	Nashville	James R. Whitley	Chattanooga
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Edmond H. Kalmon, Jr.	Nashville	John McQ. Wilson	Memphis
James K. Kaufman	Nashville	Shelburne D. Wilson	Mountain City
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Wm. F. Kimmell	Memphis	Leonard D. Wright	Memphis
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Jos. McCain	La Follette		
J. D. McCullough	Knoxville		
P. A. McGinnis	Bean Station		
John T. McNabb	Whitwell		
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Paul G. Morrissey, Jr.	Nashville		
Ralph G. Nichols	Knoxville		
Joshua H. Nunn	Ripley		
John R. Olson	Nashville		
Fred Overton	Nashville		
F. D. Owings	Rockwood		
Marion L. Patton	Memphis		
Geo. E. Paullus, Jr.	Memphis		
Ben L. Pentecost	Memphis		
Bedford F. Peterson	Bolivar		

## DEATHS

### DR. REUBEN R. ROACH

Dr. Reuben R. Roach, New Market; Tennessee Medical College, Knoxville, 1902; aged sixty-five; died March 15 of cerebral hemorrhage.

### DR. J. E. CARSON

Dr. J. E. Carson, Maryville; University of Tennessee, Memphis, 1912; aged fifty-nine; died May 15, 1941.



## DR. R. BOYD BOGLE

Dr. R. Boyd Bogle, Nashville; University of Nashville Medical Department, 1894; aged sixty-six; died May 25, 1941.

## DR. L. T. STEM

Dr. L. T. Stem, Sarasota, Florida, formerly of Chattanooga, and past president of the Tennessee State Medical Association; University of Tennessee, 1909; aged fifty-seven; died May 15.

## RESOLUTIONS

## DR. R. B. GASTON

On April 16, 1941, the Supreme Physician saw fit to remove from our midst one of our most trusted and beloved associates, Dr. R. B. Gaston.

Doctor Gaston was well endowed for the pursuit of his profession. He possessed a strong mind, a strong body, and a strong character. He was recognized as a competent physician and surgeon, whose reputation extended beyond the borders of our state, but he was more than a surgeon. He was an outstanding citizen, one who exerted a wholesome influence in the affairs of the community which will be felt for many years to come.

Doctor Gaston was uncompromising in his conception of medical ethics and adherence to our code of ethics. He always dealt with principles and was big enough to see the other person's point of view. He possessed a keen intellect, and one was impelled to admire and respect the many views that his broad and brilliant mind so often conceived and expressed.

*Therefore Be It Resolved*, That the Wilson County Medical Association deplores the passing of our distinguished comrade.

*Be It Further Resolved*, That the community has lost a valuable citizen.

*Be It Further Resolved*, That a copy of this resolution be sent to the family, a copy given to the local newspapers, a copy sent to the JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION, and a copy retained

in the official proceedings of the Wilson County Medical Association.

R. C. KASH, M.D.,

SAM B. MCFARLAND, M.D.,

*Committee.*

## DR. R. B. MACON

Dr. R. B. Macon, aged sixty-five, was a graduate of Vanderbilt University and Jefferson Medical College, and a leading physician of Montgomery County and Middle Tennessee. A member of the Medical Operating Committee of Clarksville Hospital for many years, he was appointed chairman of the committee in 1937 and served in this capacity until his death. He was a popular practitioner, always ethical and deeply interested in his patients, and was eminently successful in his profession. His service as chairman of the Clarksville Hospital Medical Operating Committee was distinguished for its progressiveness, maintenance and raising of high standards of medical efficiency being continually uppermost in his mind. He played an important part in the recent enlargement and improvement of the hospital, giving willingly of his time and energy in conceiving and planning this important community project.

*Therefore Be It Resolved*, That the Montgomery County Medical Association record its appreciation of the splendid service of this one of its ablest members. His passing from among us has caused general sorrow and distinct loss to the medical fraternity and community.

*Be It Further Resolved*, That these resolutions be spread upon the minutes of the Montgomery County Medical Association, a copy sent to the STATE MEDICAL JOURNAL, and one to the surviving members of his family.

Respectfully submitted,

(Signed) J. W. ROSS.

PAUL E. WILSON,

*Committee.*

## DR. THOMAS JENNINGS

The Anderson County Medical Society has lost a very valuable member in the passing of Dr. Thomas Jennings on April 1, 1941. Doctor Jennings was a practicing physician in the town of Clinton for eight

years. He was a graduate of the Tennessee Medical College at Nashville in the Class of 1909. He was one of the most faithful members of the Anderson County Medical Society, always ready and anxious to do everything within his power for the interest of the society.

Doctor Jennings was a Christian gentleman and loved by everyone who had the privilege of knowing him because he always had a smile and happy greeting for his friends.

*Therefore Be It Resolved*, That we have lost in Doctor Jennings a true and valuable friend.

*Be It Further Resolved*, That we extend to his bereaved wife and family our deepest sympathy.

*Be It Further Resolved*, That a copy of this resolution be sent to the wife of the deceased and a copy to the Tennessee State Medical Society.

A. J. BUTLER, M.D.,  
J. M. COX, M.D.,  
P. M. DINGS, M.D.,  
*Committee.*

## MEDICAL SOCIETIES

*Benton, Carroll, Weakley, and Henry Counties:*

A meeting of the society was held in McKenzie on Tuesday evening, June 10.

An interesting program was prepared for the meeting by Dr. Roy Douglas of Huntingdon, secretary of the organization.

Papers read were "True versus False Labor," by Dr. W. A. Ruck of Memphis, and "Osteomyelitis of the Skull Resulting from Infection in the Sinuses," by Dr. W. Likely Simpson, Memphis.

*Blount County:*

The following papers are scheduled to be read:

June 16—"Diseases of the Lungs—Suppurative Pneumonia, Abscesses, Bronchiectasis," by Dr. G. D. LeQuire. Discussion to be opened by Dr. R. H. Haralson.

June 19—"Experiences with Surgical Treatment of Ruptures," by Dr. H. A. Callaway. To open discussion Dr. J. M. McCulloch.

*Hamilton County:*

June 5—"New and Original Operation for Uterine Displacement" (films) was read by Dr. Edward T. Newell.

On July 3 Dr. C. R. Thomas will read a paper on "Pulmonary Embolism in Heart Disease."

*Knox County:*

On June 17 Dr. A. H. Lancaster's subject will be "Congenital Syphilis." Drs. Frank Faulkner and G. A. Williamson will open the discussion.

## OTHER MEDICAL SOCIETIES

Dr. V. E. Massey of Huntingdon was elected president of the West Tennessee Medical and Surgical Association that held its fiftieth annual meeting in Dyersburg on May 16.

Drs. A. T. Hicks of Camden and C. E. Bolen of Wildersville were elected vice-presidents. Dr. George McSwain of Paris was re-elected secretary and Dr. John Jackson of Dyer, assistant secretary.

The fifty-first meeting of the association will convene at Jackson in 1942.

The Middle Tennessee Medical Society held a meeting in Clarksville on May 16. The following officers were elected: Dr. T. C. Rice, Franklin, President; Dr. V. H. Griffin, Clarksville, Vice-President; and Dr. R. A. Daniel, Jr., Nashville, Secretary.

The date and place for the fall meeting will be announced later.

## WOMAN'S AUXILIARY

President.....Mrs. W. W. Potter  
Knoxville  
Press and Publicity.....Mrs. Hollis E. Johnson  
Nashville



MRS. W. W. POTTER

President, Woman's Auxiliary to Tennessee State  
Medical Association

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Lumbar Anesthesia in Obstetrics. R. J. Fraser. *Anesthesia and Analgesia*, November-December, 1940.

The author discusses the dangers of lumbar anesthesia when used in upper abdominal work, while for lower abdominal work or obstetrics it is safe. Low lumbar anesthesia involves little risks, even though the heart and kidneys are not functioning properly. The author has had no fatalities or complications to date. The factor of safety in-

cludes normal, manipulative, forceps, and operative delivery.

Lack of ability, self-confidence, or experience in making a lumbar puncture, not its so-called dangers, is probably the greatest drawback to lumbar anesthesia. Lumbar anesthesia abolishes pain; the uterus contracts; soft parts are more relaxed; examination is more complete; forceps are more easily and accurately applied. There is no tendency to increased hemorrhage and babies show no ill effects from its use.

### OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

The Advantages of Conservative Obstetrics as Shown by Examination Six Weeks Post Partum. H. Bristol Nelson, M.D., and Daniel Abramson, M.D., F.A.C.S., Boston, Massachusetts. *American Journal of Obstetrics and Gynecology*, 41: 800-803, May, 1941.

In caring for an obstetric patient, the accoucheur's greatest aim is to bring to a successful conclusion one of nature's processes, both from the point of view of the mother and of her baby. There is hardly a doubt in the minds of most of us that the end result of any obstetric case is a reflection of what has gone on not only after delivery, but in very great part what has been done prior to, and more particularly at the time of delivery. After delivery one can only aim to restore the pelvic organs to their physiologic normal condition in a reasonable period of time, usually considered by most obstetricians as six weeks. The general attitude at the Boston Lying-in Hospital is one of conservatism, and it is because of this that during the past decade the authors have been able to place not only their morbidity, but the maternal and fetal mortality at the lowest level in the history of the hospital. Their morbidity averages 5.5 per cent. The results are due in some measure to the judicious use of analgesics in labor. It is apparent from observation during the past ten years the patients receiving medication are less likely to be unnecessarily interfered with, whereas in nonmedicated cases the sympathy for the patient on the part of the doctor too often interferes with the management of normal labor. In other words, the natural forces of labor are given every opportunity to play a great part in the management of the obstetric case. Manual dilation is an extremely serious procedure, both from the maternal and fetal standpoints. It is the authors' policy to deliver as many patients as possible normally or by low forceps. High forceps have been abolished. Internal podalic version has only a rare indication. Midforceps are but seldom necessary. Conservatism is also the rule in treatment of the cervix. They do not inspect cervixes at the time of delivery, nor do they advocate immediate suturing of the cervix except when there is hemorrhage.



Use of vaginal douches, silver nitrate, and electrocautery is encouraged. Third-degree retroversions should be treated only when symptomatic and then by the use of the Smith Hodge pessary before resorting to surgery.

The bladder should be watched carefully during labor and immediately afterwards and treated to prevent atonicity.

Several tables illustrate the above statements and conclusions drawn.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Legal Provisions for Second Injuries Under the Workmen's Compensation Laws. George Lavos. *American Journal of Ophthalmology*, May, 1941.

A résumé of compensation laws concerning second injuries is presented. These vary almost with each state and all seem unsatisfactory since each discriminates against either employer or employee. The question revolves around cases such as an employee who, having lost an eye in a previous accident, now loses the second eye and thus becomes totally incapacitated. Should the second employer pay for total disability or for disability caused by the loss of one eye only? The author makes a plea for each state to have a "second-injury fund," from which would be paid compensation amounting to the difference between the second injury and total disability. This fund would be assessed against all employers. Fifteen states have already adopted the system.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Diagnosis of Hypothyroidism in Childhood. Lawson Wilkins, M.D., and Walter Fleischman, M.D., Baltimore. *The Journal of the American Medical Association*, 116: 2459 (May 31), 1941.

Every infant who is retarded in development, who is ugly, who is peculiar, or who has dry skin and coarse hair does not have hypothyroidism. On the other hand, there are children suffering from mild or borderline hypothyroidism who have none of the signs of cretinism. In adults hypothyroidism produces the familiar physical signs to which the term myxedema has been applied. In childhood, thyroid deficiency gives rise to additional changes due to its influence on growth and development.

The most important signs of anatomic alterations resulting from hypothyroidism in the period of growth are stunted growth, infantile skeletal proportions, infantile naso-orbital configuration, retarded skeletal development, delayed and defective development of the teeth, and epiphyseal dysgenesis. There are other changes that are less char-

acteristic and less constant. Frequently the hair is normal and the skin may show no change.

Hypothyroidism invariably slows the rate of growth, and the untreated cretin lags more and more below the average height until dwarfing is obvious. This is one of the most important causes of dwarfism. The authors studied sixty-four dwarfs, sixteen of whom definitely had hypothyroidism and in all but one of these thyroid therapy caused a rapid acceleration of growth.

At birth the distance from the top of the head to the symphysis pubis is to the distance from the symphysis pubis to the soles of the feet as the ratio 1.7 to one. Normally the lower segment (distance from the symphysis pubis to the soles of the feet) grows more rapidly than the upper segment so that at ten or eleven years of age the ratio of the two segments is about one to one. The authors find that in hypothyroidism as the child grows older not only is the growth retarded, but the ratio of the skeletal segments remains that of the younger child.

The facies of the hypothyroid child is characteristic. The bridge of the nose is broad and flat, the eyes appear widely spaced, and the nose is short and undeveloped. The normal development of the features, and especially of the nose, is delayed, so that the child of five or six years with thyroid deficiency may show the naso-orbital configuration of an infant one or two years old.

It has long been known that hypothyroidism causes always delay in the appearance of centers of ossification in the cartilaginous centers. Treatment with thyroid causes immediately acceleration in the rate of osseous development, and by following the rate of osseous development it can be determined if adequate dosage of thyroid is being given. However, in some cases, it has been found that endochondral ossification has been delayed by causes other than hypothyroidism.

The teeth are always delayed in their development in this condition, and those erupted during the period of thyroid deficiency are defective and undergo early caries.

Epiphyseal dysgenesis is probably the most specific anatomic change resulting from hypothyroidism. Normally, ossification begins from a single small focus in the center of the cartilage and extends peripherally in an orderly manner. In thyroid deficiency calcification appears as multiple, small, irregular foci scattered over a considerable area of the cartilage. While this change occurs in all the endochondral centers, it is observed most frequently and more markedly in the heads of the femur and the navicular of the tarsus.

Thyroid deficiency in the early years causes delay in the development of the brain, and if untreated results in permanent histologic change in the brain cells. If treatment is instituted in infancy, there may be no permanent damage to the brain cells and mental development may be normal.

While the signs and symptoms mentioned may

be the result of hypothyroidism, and when present facilitate the diagnosis, it must be remembered that they may be due to other causes. Not only is the diagnosis dependent upon these findings, but they should be accompanied by definite physiologic evidences of diminished thyroid function, such as physical and mental sluggishness, circulatory changes, and metabolic and chemical abnormalities, which are discussed later.

## ROENTGENOLOGY

By FRANKLIN B. ROGART, M.D.  
Medical Arts Building, Chattanooga

**The Grooved Defect of the Humeral Head: A Frequently Unrecognized Complication of Dislocations of the Shoulder Joint.** H. A. Hill and M. D. Sachs. *Radiology*, Vol. 35, No. 6, p. 690, December, 1940.

As early as 1861, Fowler, reporting on forty-one anatomical shoulder specimens where dislocation had occurred, described a typical grooved defect in the humeral head as follows: "The defect is located posterior and medial to the greater tuberosity on the posterolateral aspect of the articulating surface of the humeral head. The groove is navicular or wedge-shaped and its average measurements are 2.5 centimeters in length, 1.5 centimeters in width, and .75 centimeter in depth. The defect is demonstrated from the surrounding normal bone by sharp or vertically projecting walls, which in the larger defects stand at a right angle to each other. The spongiosa bordering the defect is thicker than elsewhere and is covered with a glossy, smooth connective tissue layer. No fragment avulsed from the humerus is to be seen."

There have been many theories offered to explain the presence of this groove, most of which are untenable. There is undisputable X-ray evidence to prove that such defects do occur immediately after following a single injury to the shoulder in cases proven to be previously normal. The authors conclude on the basis of their own cases that the defect is due to a compression fracture of the comparatively soft bone comprising the posterolateral portion of the head of the humerus.

### ROENTGENOGRAPHIC FINDINGS

In order to demonstrate such compression fractures of the humeral head, it is essential in most cases that films be made in the anteroposterior projection made with the arm in marked internal rotation. In a few cases, the defect will be demonstrated only by a tangential view.

The X-ray characteristics of such compression fractures are as follows:

1. The defect is located on the posterolateral portion of the humeral head; only when very large does it extend into the greater tuberosity.

2. In external rotation all that may be noted is a slightly increased rarefaction of the region medial to the lateral contour of the greater tuberosity,

except in the case of extremely large defects, when a slight flattening of the contour may be noted. Both of these changes are easily overlooked, especially if a view of the opposite shoulder is not available for comparison.

3. With the arm in internal rotation there is:

(a) Flattening of the contour of the articular surface, or, in larger defects, an indentation, excavation, or groove on a level with the greater tuberosity.

(b) A sharp, dense line running downward from the top of the humeral head, parallel to the axis of the shaft and somewhat lateral to the midline. This "line of condensation" is a special sign and is the result of the compression or compaction into a narrow medial border of the spongy bone previously occupying the space of the defect. Pilz believes that one may judge the size of the defect present by a measurement of this line.

(c) The floor of the defect (best seen in the tangential view) also shows a dense compacted border.

4. An avulsed fragment from the humerus is practically never present. There may be a small chip from the inferior portion of the glenoid rim of the scapula.

The authors then report in detail an interesting group of cases. They point out that occasionally a grooved defect in the humeral head may be confused with a fracture of the greater tuberosity, but that this error should not be made if a thorough X-ray examination is made because the location of the two lesions is different and in fractures of the greater tuberosity a displaced fragment can usually be made out.

### SUMMARY AND CONCLUSIONS

1. More than two-thirds of the dislocations of the shoulder are complicated by a bony injury of the humerus or scapula detectable by roentgenographic means.

2. Fractures of the greater tuberosity alone or in combination with fractures of one or more parts of the scapula, most frequently the glenoid rim, comprise the most common group of bony injuries complicating shoulder dislocations in this series.

3. Compression fractures as a result of impingement of the weakest portion of the humeral head; that is, the posterolateral aspect of the articular surface against the anterior rim of the glenoid fossa are found so frequently in cases of habitual dislocation that they have been described as the "typical defect." If large, such grooved defects may lead to unsatisfactory results following the usual operations for recurrent dislocations.

4. There is ample proof that many of these defects are sustained at the time of the original dislocation and they may be an etiologic factor in recurrent dislocations.

5. Roentgenographic study is the best method of obtaining a true conception of the presence, location, size, and form of the defect.

6. A minimal X-ray examination comprises an



anterioposterior projection of the shoulder with the arm in adduction and external rotation and a similar projection with the arm in marked internal rotation. Tangential views often prove useful.

7. The X-ray characteristics of posterior humeral compression fractures are: a wedge-shaped defect of the posterolateral aspect of the head of the humerus, varying from five millimeters to three centimeters in length, three millimeters to two centimeters in width, and ten to twenty-two millimeters in depth. A special sign is the sharp, vertical, dense medial border of the groove known as the "line of condensation," the length of which is correlated with the size of the defect.

8. Small cystic changes in the subchondral portion of the posterolateral area of the humeral head are present in a few cases after shoulder dislocations. These are presumably due to small compression fractures, but may possibly be due to nutritional changes following damage to minute blood vessels supplying these areas.

9. A more widespread knowledge regarding the possibility of the existence of these lesions should lead to better results in the treatment of shoulder dislocations and disabilities. The determination of a compression fracture defect also is of obvious medico-legal importance.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
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The Formation of Renal Calculi in Bedridden Patients.  
Montague L. Boyd. *Journal of the American Medical Association*, May 17, 1941.

The purpose of this article is to call attention to the effects of inadequate renal drainage and of phosphaturia in the formation of renal calculi in bedridden patients.

It is well known that renal calculi frequently form in patients with fractures or poliomyelitis where disturbance of urination is present. These calculi are usually composed largely of calcium

phosphate and may form very rapidly and without symptoms.

Urinary obstruction, focal infection, hyperthyroidism, infection of the urinary tract, and vitamin deficiency are important etiological factors in the formation of renal calculi, but they are not always the essential etiologic factors. Phosphaturia and poor drainage with increased excretion of calcium, which seems to occur in patients with paralysis, are capable of producing phosphatic calculi.

In reviewing a large number of stereoscopic urograms the author found that it is not unusual to find the calices of one or both kidneys running backward from the pelvis so that the pelvis lies almost entirely ventral to the major calices. This lack of proper drainage when the patient is lying on the back may be a responsible factor in many of these cases with stone formation.

Phosphatic stone formation is usually the result of three things: (1) a precipitation of the urinary phosphates; (2) a lack of adequate drainage of the renal calices and pelves due to improper posture and to an inadequate fluid intake; (3) possibly increased calciuria in many cases.

Phosphaturia is a common occurrence in bedridden patients. It is due to a number of different causes: (1) metabolic disturbances from the disease or injury; (2) disturbances of the gastrointestinal tract from being bedridden and from sedatives and analgesics; (3) too much citrus fruit juice; (4) saline cathartics; (5) sodium bicarbonate and magnesium oxide given for indigestion; (6) inappropriate diet.

Preventive treatment consists of: (1) correction of the metabolic disturbances; (2) relief of urinary obstruction; (3) removal of foci of infection; (4) regulation of the diet; (5) sufficient vitamins in diet; (6) large urinary output (force fluids); (7) urinary acidification; (8) renal drainage by change of posture (lie on abdomen two to three hours each day when possible).

The author reports three cases of poliomyelitis and one of fracture of the femur who formed stones. Cases with fractures are more easily handled than paralytics.



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## THE DIAGNOSIS OF RHEUMATIC FEVER IN CHILDREN\*

STANLEY GIBSON, M.D., Professor of Pediatrics,  
Northwestern University Medical School, Chicago

We do not know the cause of rheumatic fever. For over forty years the streptococcus has been incriminated, if not as a cause of rheumatic fever, at least as closely associated with rheumatic fever; but so far as the actual bacterial or virus cause is concerned, we cannot say that the problem is yet solved. However, we do know a great deal about the circumstances under which rheumatic fever arises. We know, for example, that it is closely associated with upper respiratory infections; that it oftentimes follows at an interval of two or three weeks a streptococcic respiratory infection; we know that it occurs in temperate climates, particularly in the northern United States and in England; we know that it occurs much more often among the so-called lower classes, those who are economically poorly situated, than it does among middle-class or well-to-do people.

I have been talking since I have been here with a number of practitioners who tell me that rheumatic fever is decidedly common in this state. I am interested in that because we have always been taught that as we go farther south in our country we encounter less rheumatic fever and perhaps less severe rheumatic fever. Certainly in Chicago we have a great deal of rheu-

matic fever of a severe type, and I want to devote the chief part of my talk at this time to the various manifestations.

Rheumatic fever manifests itself in a great variety of ways. I suspect that a great many cases of mild and atypical rheumatic fever we are completely unable to diagnose. On the other hand, there are clear-cut manifestations which when present are diagnostic of rheumatic fever. I think there are five of them that can be definitely labeled as rheumatic. The first one, and the one that you are all familiar with, is the so-called polyarthritis or joint pains. Anyone with any experience whatsoever can diagnose a typical polyarthritis. There is nothing else that behaves in quite the same way as the condition in which the child complains of pain in one of his joints, has a fever, has marked tenderness, sometimes redness and swelling of the joint, in the course of a few hours has pain in another joint, perhaps an elbow or a knee, and in the course of a few days has these fleeting pains skipping rapidly from one joint to another, with the joints first involved usually clearing up in a relatively short time. When one hears that kind of a story I think he can be completely convinced that he is dealing with rheumatic fever. If there is still any doubt in one's mind about the correct diagnosis, there is

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\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.



a therapeutic test which is practically convincing. I don't know of anything much more dramatic in the field of medicine than the promptness with which rheumatic joints respond to the administration of sufficient doses of aspirin or sodium salicylate. When we see our children coming into the hospital in extreme discomfort, oftentimes with so great pain that they don't even want the weight of the bedclothes on the affected joint, we can promise them that in twenty-four or forty-eight hours they will be quite comfortable, and we are seldom wrong in that statement. The dosage has to be large. For a child of eight or ten years we like to give at least sixty or eighty grains of aspirin in the first twenty-four hours to make sure that we shall completely allay the joint pains.

Of course, the difficult part of the problem is in the case of those that are not severe. A great many of these children do not have redness, do not have swelling of the joints. The only manifestations they show are pain and tenderness, and sometimes even these symptoms are extremely mild.

There are other things that come up in the diagnosis which are not easy. What about the child whose mother tells you that he has growing pains? Are growing pains rheumatic fever or are they not? I think one has to question the parent a little bit more narrowly to make out just what is meant by growing pains. I am thoroughly convinced that muscle pains, occurring usually only in the legs and not in the arms, provided there is no pain in the joints, are not a part of rheumatic fever. Children have muscle pains from a variety of causes—from flat feet, from fatigue, various orthopedic conditions. The more that we have studied rheumatic fever the more confident we have felt that we could not make a diagnosis of rheumatic fever upon so-called growing pains which are muscular in origin. When the pain involves the joints, then one has to be more careful, and if the joint pains are multiple, as I have emphasized, there is little doubt about the accuracy of the diagnosis.

Of course, there are other things that may simulate, but not too closely, the joint

pains of rheumatic fever. We have joint pains in lues, tuberculosis, leukemia, and sickle-cell anemia, but if one studies them carefully they are usually more prolonged and they do not have that fleeting character which is the case in the rheumatic arthritis.

The second manifestation of rheumatic fever that I wish to emphasize is that of the nervous system, chorea. It seems a far cry from joint pains to chorea. They are diseases that clinically are completely different, and for many years, as you know, the textbooks described chorea as a functional disease of the nervous system. The great majority of students of rheumatic fever at the present time place chorea among the rheumatic phenomena. There are a few who do not agree with that classification and feel that chorea may be due to other causes, but our own experience has been that chorea is a very definite rheumatic manifestation.

I think that perhaps it is very largely a matter of definition. After all, what is chorea? The outstanding symptoms, the one which the laity recognize, is the presence of purposeless movements, but purposeless movements in themselves are not sufficient to make a diagnosis of Sydenham's chorea. There are other changes that are present. Equally important with the incoordinate movements of chorea is the occurrence of emotional instability which occurs sometimes before and certainly with the presence of these purposeless movements. Furthermore, chorea is a disease which has a more or less definite onset; the child is ill for a matter of a month or two or three months and eventually gets well. To my mind, that is the picture of chorea; a child previously well, who develops emotional instability, develops purposeless movements, and then gets over them sooner or later, depending upon the type of treatment that the child has received.

The choreiform movements that you see, for instance, in a postencephalitic syndrome or that you see in athetosis do not have that same clinical course. They persist unchanged for long periods of time. If we take into consideration all of the features

that are represented in a typical chorea, I think that is the type which is a manifestation of rheumatic fever.

There is a third manifestation of rheumatic fever that is pathognomic, and that is the presence of the so-called subcutaneous rheumatic nodule. When one sees them typically, usually at the tips of the elbows, at the knees, on the knuckles, at the ankles, upon the aponeurosis of the scalp, sometimes upon the spine, sometimes few in number, sometimes clusters of them at these areas, one can be quite confident that this phenomenon is a manifestation of rheumatic fever.

There is a fourth manifestation of rheumatic fever which is not so well known or so often emphasized, and that is a manifestation that occurs upon the skin, the so-called annular erythema. This manifestation is a fleeting one. This erythema may be seen at one hour and be gone an hour later. It recurs rather frequently in the patient who manifests it at all, but in our experience it has occurred in a relatively small number of our cases. This so-called annular erythema is a sort of thin, pink, wavy line with normal skin within the ordinarily circular areas and normal skin around it. This line is not elevated; it is purely an erythema; it does not itch; it does not burn; there are no subjective symptoms connected with this manifestation at all, and it is very regularly missed unless one searches particularly for it.

The final manifestation, and the only manifestation of rheumatic fever that is really important from the standpoint of the child's future, is that of the heart disease itself. The diagnosis of the heart disease, if it is at all clinically evident, is relatively easily made. In practically every case of rheumatic involvement of the heart, the mitral valve is involved. There are occasional exceptions, but they are relatively few. Therefore, if we look for the signs of mitral damage through the systolic murmur which occurs at the apex and later on the mid-diastolic murmur at the apex, and later still the presence of a presystolic murmur at the apex, we are usually able to make a diagnosis of mitral damage.

Another valve that is involved in a fair percentage of cases is the aortic valve. In diagnosing aortic insufficiency, we look for the typical diastolic murmur, beginning with the second sound, not over the aortic area, but at the left sternal border because the murmur is heard very much better there than it is over the aortic area.

Perhaps I should not dwell too much upon the murmurs in rheumatic heart disease. It might give you the impression that the valvular involvement is the important part of the picture. As a matter of fact, it is not. I think it is perhaps the least important part of the picture of rheumatic heart disease in childhood. The damage to the heart muscle which regularly occurs in all of these cases of rheumatic heart disease is infinitely more important from the standpoint of the child's future than is the valvular damage.

How are we going to diagnose myocardial damage? We cannot accurately assess the amount of damage that has been done to the heart muscle, but we certainly have a number of things which give us at least a hint as to what is going on. The weakness of the heart tones, the heart rate, the amount of dilatation of the heart, the amount of permanent dilatation and hypertrophy which remain after the acute or subacute episode in the heart has quieted down are pretty good evidences of the degree of myocardial damage that has occurred. I want to emphasize again that the size of the heart after an acute rheumatic attack is dependent far more upon the amount of myocardial damage than upon the amount of valvular damage that has occurred. If the heart muscle is relatively sound, it can stand up against a good deal of mechanical handicap from damaged valves.

There is still another tissue of the heart that is quite often damaged in the course of rheumatic heart disease and that is the pericardium. A fair percentage, perhaps ten or twelve per cent, of all the cases that we see in the hospital manifest a definite acute pericarditis as shown by the presence of a friction rub. Again, I don't feel that the presence of pericarditis is necessarily



particularly serious in itself. It does usually occur in the children who are seriously ill, but I think that the pericarditis is more than anything else an expression of a severe degree of myocardial damage, and that that, after all, is the important factor in assessing the amount of damage to the heart as a whole.

I would like to present a few statistics relative to these different phenomena that I have mentioned to show how they are inter-related, and to give you perhaps a little evidence concerning the importance of these various manifestations.

The statistics are derived from a study of 1,487 cases of rheumatic fever which we have seen in the last ten years at the Children's Memorial Hospital in Chicago and at St. Luke's Hospital. The number of children manifesting the different rheumatic phenomena is listed below, together with the percentage of each group who had some additional manifestation.

		<i>Per Cent with Other Manifestations</i>
Polyarthritis . . . . .	983	73.5
Chorea . . . . .	581	56
Rheumatic nodules . . . . .	156	100
Annular erythema carditis . . . . .	864	84

There are too few instances of annular erythema to be statistically important. I also omitted them because until recent years we have not looked for annular erythema as carefully as we should have done, so any figures I might give you would probably be inaccurate.

If a child has polyarthritis, what is the likelihood of his having other rheumatic manifestations in addition to his polyarthritis? As a matter of fact, of all these children, 73.5 per cent had other rheumatic manifestations.

What about chorea? Some have doubted the rheumatic nature of chorea. How many of these children have other rheumatic manifestations? We have found that fifty-six per cent have other manifestations of rheumatic fever and about forty per cent of the entire number have definite evidence of heart damage. So chorea, to my mind, is not a functional disease of the nervous sys-

tem; it is an infection. It is true that the patient with chorea has no fever; he does not have an increased white count; he does not have an increased sedimentation rate. We cannot by any clinical or laboratory means establish the presence of infection in cases of chorea, but the extremely close association of chorea, as high as practically three-fifths of all the cases showing other rheumatic manifestations, convinces us that it surely must be one of the major manifestations of rheumatic fever.

When we come to rheumatic nodules, there are other manifestations of rheumatic fever in 100 per cent of the cases of rheumatic nodules. As you may know, rheumatic nodules represent a severe rheumatic infection, and 100 per cent of our children have had other rheumatic manifestations. In other words, the rheumatic nodule is not only diagnostic of rheumatic fever; it is diagnostic of a severe degree of rheumatic fever, and practically always associated with demonstrable heart disease. It is not only important diagnostically; it is important prognostically because the percentage of children who succumb to rheumatic heart disease is much higher among those who exhibit nodules than among those who do not show rheumatic nodules. We look upon them as extremely significant, extremely important, and more or less of evil significance.

In our cases of rheumatic heart disease, eighty-four per cent showed some other rheumatic manifestation. That is interesting chiefly because of the sixteen per cent who had no other rheumatic manifestation. Ordinarily heart disease is looked upon as a complication of rheumatism or of rheumatic fever. It should not be looked upon as such. Rheumatic heart disease is just as much a part of rheumatic fever as are the joint pains or as the rheumatic nodules or the erythema, and the sooner we get away from the idea of talking about heart disease as a complication, I think the clearer our understanding of the condition will be.

These children with rheumatic heart disease who had no other manifestation that we could find either by physical examination or through the history obtained from



the parent should not occasion surprise because, after all, chorea often stands alone as the only rheumatic manifestation. Some children have joint pains and have no other rheumatic manifestation. It seems to be just as reasonable to say that a child could have rheumatic heart disease and not have any other manifestation. Of course, you may ask: "How do you know the child has rheumatic disease? How do you know that the heart condition isn't upon some other basis?" My answer is that in a fair percentage of these cases the diagnosis of rheumatic heart disease has been made at autopsy, so there is no doubt about the nature of it. Furthermore, so far as I know, there is no other infection except rheumatic fever which will produce the same type of crippling of the heart valves as that which is found in rheumatic heart disease.

I would like to say something about what happens to these children. I think a mistake that is commonly made is that of not taking seriously enough the relatively innocent polyarthritides that many children have. They are not very sick with it in many instances; they have a relatively low fever; the joint pains are fleeting, in many cases not severe. After a day or two of treatment with aspirin or sodium salicylate, the joint pains disappear and the temperature returns to normal. The child looks well. He feels well. Why should he stay in the hospital? Why should he stay in bed? Neither the child nor the parent, oftentimes, can see any good reason why he should, but if you will take sedimentation rates on those children who are apparently well, you will very regularly find that they are not well, that they still have an increased sedimentation rate, and oftentimes it is four weeks, six weeks, even eight weeks before the sedimentation rate drops back to normal, indicating that the period of active infection has passed.

I think we are inclined oftentimes to be even more careless about chorea, because here again it is difficult to see the close association and the likelihood of cardiac damage resulting from chorea.

There is another interesting thing about chorea. If we see a child come into the hospital for the first time with chorea, not having had any other rheumatic episode at

all, we expect, in the majority of cases, that that child is going to go home from the hospital with a normal heart as far as we are able to make out, but if we have that child come back to our clinic at regular intervals, as we always do, perhaps every three months, not infrequently we will pick up joint pains which have occurred subsequently to the chorea, and not infrequently, after a period of two or three or four years, we suddenly discover, without any acute episode in between, that this child now has a definite cardiac involvement. So, again, chorea should be looked upon as a danger signal, and even if the child does not have *heart involvement* at the time that he is seen, he is a candidate for *heart involvement* and should be kept under observation on that account.

Just a word as to prognosis. We have severe rheumatic fever in Chicago, perhaps more severe than you have here, and I merely want to say that in this group of children that I am talking about that have been followed for varying periods, some of them for a year or two, some of them for ten and twelve and fifteen years, 146 are known to be dead. That is a mortality of ten per cent, and that does not by any means tell the whole story, because many of these children who are now alive are going to have recurrent infections year after year and ultimately succumb to a recurrence of the rheumatic infection. That again does not tell the whole picture, because many of these children that are alive are almost helpless; many of them are so badly incapacitated that they have to go to a cardiac school; they are taken to and from school in a bus; they have a rest period at school; they are not allowed any activity at home; in other words, they have to be cared for as chronic invalids either by their families or by the community. So I think one cannot emphasize too strongly the morbidity and the mortality which follow rheumatic fever in childhood, and our task is to appreciate the early manifestations, follow these children carefully, keep them in bed long enough when they have an active infection, and give them the best advice that we are able to give, in the hope, though not an awfully good one, that we can prevent further recurrences of the infection.

## THE TREATMENT OF SHOCK WITH PARTICULAR REFERENCE TO THE USE OF BLOOD PLASMA\*

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This paper is concerned not with the pathogenesis of shock but rather with its prevention and treatment. It may not be amiss, however, to state it is generally agreed that there is a decrease in the effective volume of circulating blood due to a decrease in the blood volume (loss into the tissues or to the outside) or to an increase in the capacity of the vascular system or to both. The loss of whole blood or plasma from the blood vessels is usually accompanied by vasoconstriction and the employment of vasoconstrictor drugs as the therapeutic agent may result in harm rather than benefit. The proper therapy quite naturally consists of the intravenous introduction of whole blood or a substitute for it. If the clinical picture is due to a combination of the loss of fluid from the vessels and to an increase in the size of the vascular system, which is not usually the case, the therapy should consist of the use of vasoconstrictor drugs as well as the intravenous injection of whole blood or plasma. Unfortunately, one is not always able to be certain as to the condition of the blood vessels in shock. It may be stated, in general, that very cold extremities indicate the loss of a considerable part of the blood volume from the blood stream and replacement therapy is indicated. The great majority of severely injured patients present this type of disturbance. The blood volume is usually not diminished greatly in the patient with warm extremities (vasodilatation) and spontaneous recovery usually occurs. This may be speeded by the use of a drug which causes vasoconstriction.

It is apparent that the condition of the patient prior to the operation or accident is an important factor in determining whether or not shock will develop. Unless proper replacement therapy has been employed, the patient who has lost most of the

gastrointestinal secretions by vomiting will withstand a major operation very poorly. This is readily understood when it is known that the gastrointestinal secretions of the adult have been estimated at eight liters daily whereas the plasma volume is only about three liters. This point emphasizes the importance of the proper preparation of the patient before undertaking an operation. Generally speaking, it is easier to prevent shock than it is to treat successfully the fully developed condition. If the blood pressure and blood volume remain depressed for an extended time, irreversible changes in the tissues occur and no known form of therapy will result in recovery. In connection with the prevention of shock, much benefit has resulted from the more frequent administration of blood or plasma during the course of the operation. After having introduced a needle into an ankle or arm vein, the fluid may be administered as is indicated. By the use of this plan, operations of great magnitude may be completed successfully.

It is to be understood that this paper is concerned in the main with the prevention and treatment of wound or secondary or traumatic or hematogenic shock in which there is a diminution in the blood volume. The intravenous administration of solutions of salt or glucose may result in temporary benefit but this is usually not sustained. In fact, harmful effects may follow the administration of large quantities of solutions of crystalloids. Subsequent remarks will be limited to a consideration of the use of whole blood, blood plasma and blood serum. It should be emphasized that blood and blood substitutes usually have been given to patients in shock in inadequate quantities. This custom probably arose from the fact that 500 cubic centimeters of blood is the usual quantity of blood that may be taken without danger from one donor. There is no more reason for standardizing the quantity of blood that is given to all patients than there would be for giving all diabetics the same dosages of insulin. As will be

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pointed out subsequently, intravenous therapy with blood or blood substitutes should be governed by the needs of the patient.

There is a considerable difference of opinion by various military forces as to the choice of blood and blood substitutes. The Russian army usually utilizes whole blood for transfusions, only universal donors being used in military zones. Plasma or serum is rarely used. The German army uses only whole blood. Both the civilian and military personnel are typed. Blood from only universal donors is used. The British army prefers liquid plasma or serum although the Royal Air Force is in favor of dried form because of ease of transportation. The prevailing opinion at present is that the United States Army and Navy Medical Corps will prefer the dried form.

#### WHOLE BLOOD

Except in instances of a marked increase in the concentration of red blood corpuscles, resulting from loss of plasma as in burns, there are few instances in which blood substitutes have an advantage over whole blood. The latter, however, presents increased difficulties of preservability and transportability. Included among the many points of importance in connection with the collection, preservation and collection of whole blood are the following.

1. Vacuum bottles reduce the chances of contamination. They are considerably more expensive than the usual equipment and their employment is usually unnecessary unless the blood is to be kept for extended periods or is to be converted to plasma.

2. Dextrose-citrate mixture increases the period it may be stored with safety. The dilution factor, however, is a disadvantage.

3. It is desirable to collect the blood in a cold container.

4. The blood should be traumatized as little as possible.

5. It is safer not to use blood which has been preserved for more than ten days although the Russian army allows twenty days and the German army fourteen days storage.

6. The blood should be stored at three to five degrees C.

7. It should not be warmed to body temperature before being injected after removal from the icebox.

8. In warfare, there is considerable advantage in preserving whole blood only from universal donors. This lessens the difficulties of compatibility tests.

#### LIQUID PLASMA OR SERUM

The main danger from the transfusion of whole blood results from the destruction of red blood cells in the transfused blood when incompatible agglutinins are present in the plasma of the recipient. It is not from the action of agglutinins in the transfused blood on the recipient's red cells. In other words, plasma may be given with little danger because red corpuscles which might otherwise be destroyed by the recipient's plasma are not present. Further, pooling of a number of batches of plasma results in a suppression of isoagglutinins, thereby resulting in a further reduction in the incidence of unfavorable reactions. In instances of severe injury, it is very important to be able to give the fluid immediately without waiting for compatibility tests, a marked advantage of plasma over whole blood. The indications for and the advantages of plasma include the following:

1. Hemoconcentration is present in most instances of shock and red blood corpuscles are not needed.

2. As a result of hemorrhage or other causes, the red corpuscles may be reduced greatly without causing death providing the plasma volume is not similarly reduced.

3. A given quantity of plasma causes a greater increase in osmotic pressure than an equal quantity of whole blood.

4. Plasma lends itself to greater ease of preservation and transportation.

5. Compatibility tests are not necessary.

Thus far in this paper, no distinction has been made between plasma and serum. The only difference in the two is that serum is the liquid part of clotted blood whereas plasma occupies the same relationship to unclotted blood, clotting having been prevented by the addition of sodium citrate. The only significant difference between serum and plasma is that the latter contains fibrinogen. There has been, however, a



great difference of opinion as to the safety of the two. One group has maintained that serum is preferable because of the absence of the formation of precipitates on standing and because of less chance of contamination. A second group prefers plasma because it is maintained that its use is associated with fewer unfavorable reactions than is the employment of serum. It has been held for many years that something happens to blood in the process of clotting which increases the likelihood of such reactions. Still a third group maintains that serum and plasma are equally good. The trend until recently was much in favor of the use of plasma but the pendulum appears to be swinging in the opposite direction now. The English are said to favor serum because sterility is more easily maintained in its production. Furthermore it is not necessary to add saline in order to diminish the formation of precipitates as is advisable in the case of plasma. Many points concerned with the choice of plasma and serum remain to be determined. As long as care in preparation is used, one may employ either with little danger of untoward reactions.

As stated previously, one of the disadvantages of plasma is the formation of precipitates on standing. Much work has been performed on this subject by Elliott, Busby, and Tatum and the following are their suggestions for the preparation of clear, dilute plasma.

1. The use of fasting donors.
2. The storage of blood for more than twenty-four hours before being converted to plasma.
3. The avoidance of shaking whole blood before it is transferred to centrifuge bottles.
4. Refrigeration for approximately twelve hours to permit sedimentation of red cells not removed by the centrifuge.
5. The use of a diluent containing dextrose.
6. The addition of merthiolate to a concentration of 1:10,000.

The immediate future will witness undoubtedly many improvements in methods for preparing and preserving plasma and serum. New methods will be devised for separating the red cells and the plasma or

serum and a technique for filtering large quantities of plasma in order to lessen bacterial contamination will be devised. In the meantime, slight difficulties should not stand in the way of the use of plasma or serum.

#### DRIED PLASMA OR SERUM

Without reference as to whether one is speaking of plasma or serum, a brief comparison of the liquid and dried forms will be made. Landsteiner prefers the dried form because denaturation is retarded and the multiplication of bacteria is practically nil. The Medical Research Council (England) and the Royal Air Force prefer the powder because of ease of preservability and transportability. The army group in England prefers the liquid product because of ease of administration. There is no doubt but that the advantages of the powder, namely, less denaturation, less chances of contamination, etc., are tremendously important. At the same time, it must be remembered that sterile water in a suitable container has to be available for reconversion of the powder to the liquid form and it takes an appreciable time for the dried form to go into solution.

The major impediment to the more universal adoption of the dried form lies in the difficulty and the expense connected with the conversion of the liquid to the dried state. Three general methods have been used for the drying of serum or plasma, namely, simple evaporation, vacuum desiccation, and dehydration by organic solvents. The vacuum sublimation process for dehydration is probably the best. One may use a chemical desiccant such as anhydrous calcium sulfate, or a physical desiccant such as chilled silica gel or a chilled condenser surface or the vapor may flow directly into the oil of a high vacuum pump where it is removed by a continuously operating centrifuge. By the use of the latter scheme, a machine is available which will dry 600 liters of plasma or serum per week. It is likely that simpler and cheaper units will be available in the next few years.

#### DISCUSSION

There is every reason to believe that enthusiasm for the use of plasma or serum

will continue. These can be made available in much more remote places than can whole blood. Furthermore, they can be administered immediately without waiting for the results of compatibility tests. The benefits to be expected in warfare have been realized already in Europe. In a recent issue of *The Lancet* (January 25, 1941), Whitby and his associates reported the results of the treatment of a number of air-raid casualties who were undoubtedly saved by the administration of large quantities of plasma and whole blood. Some of these received as much as seven pints of plasma and whole blood. As stated previously, it is important to realize that the failure of one pint of blood to elicit a favorable response does not mean that a larger quantity will not result in permanent benefit.

It is to be hoped that the use of plasma and serum in the treatment of war injuries to our military and civilian population will not be necessary. At the same time, preparation for such an eventuality must be made. Even if we are spared this unfortunate experience, the ready availability of plasma and serum will result in the saving of many lives in the civilian practice of medicine.

#### DISCUSSION

DR. ELKIN L. RIPPY (Nashville): I wish to congratulate Doctor Blalock on the presentation of an excellent paper, especially the manner in which he presents a difficult subject, in words and phrases so clear and concise as to make everyone in this audience have an understanding of the fundamental principles of shock and its treatment, and especially the value of plasma as a substitute for blood. I also wish to congratulate the society on being able to have Doctor Blalock talk on his favorite subject, "Shock," for at the present time he is an outstanding authority on this subject in America.

"It is an ill wind that blows no good," and if no other good is derived from this world conflict than

that it has made the medical profession more conscious of the role that shock plays in the cause of death in traumatic injuries thousands of lives will be saved yearly. In the United States alone 40,000 persons are killed annually by cars, and of this group a large percentage of them did not die from the primary injury, but from shock resulting from loss of blood, unnecessary handling, and the lack of immediate transfusion. The difficulty in the outpatient department of the hospital is its inability to secure suitable donors in time to combat shock. Plasma seems to be the answer to this much-needed substitute for blood. But, unfortunately, the medical profession and hospitals are slow to grasp the importance of the vital need and value of plasma, and at the present time plasma is only available in a few of the hospitals in this country.

I wish to present two slides taken from a review of cases of perforating gunshot wounds of the abdomen which I recently made of the cases in Nashville, which illustrate the influence of hemorrhage in the production of shock and cause of death. The amount of hemorrhage was divided into three groups: the large hemorrhage group of 1,000 cubic centimeters or more, moderate hemorrhage group of 500 cubic centimeters or more, and the small hemorrhage group of 500 cubic centimeters or less. The statistics show very convincingly that the amount of hemorrhage was the greatest individual factor in the cause of death regardless of the organ perforated. The mortality was as follows:

Small hemorrhage.....	38.1
Moderate hemorrhage.....	58.9
Large hemorrhage.....	84

Of course, since hemorrhage was the greatest cause of death, it is imperative that these patients be given large amounts of blood immediately. However, because of the time consumed in securing suitable donors, most of the operative cases were transfused hours after their arrival in the hospital. Even with this delay in the giving of blood the mortality in those that received blood was 9.4 per cent lower than those cases not transfused. If plasma had been available in all the hospitals, the mortality would have been much lower.

So let us in our local communities attack the problem of shock with as much enthusiasm and determination as has the British surgeon attacked the problem of shock resulting from war injuries.



## INJURIES AT THE WRIST JOINT\*

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My choice of this subject is to allow us to consider the three most common injuries at the wrist at one time. This seems pertinent for the fact that these injuries all usually result from similar types of trauma and may exist singly or in combination, from fall on outstretched hand.

The articulation of the lower end of the radius with the navicular and lunate bones forms the real wrist joint. The two rows of carpal bones move as units and the intercarpal and carpometacarpal joints merely add range of motion to, rather than additional movements at the wrist joint.

We shall confine our discussion to the following injuries: Colles' fracture of the radius, fracture of the navicular, and dislocation of the lunate.

Much time has been spent in an effort to ascertain exact mechanism of these injuries, but without precision, due to many possible positions and directions of applied force. Suffice it to consider that these injuries mostly result from indirect violence by fall on outstretched hand with weight transmitted through midmetacarpal bone to os capitatum, to impinge navicular and lunate against broad articular surface of radius with fracture of lower end of radius being most frequent injury. Next a fracture of navicular bone, and lastly a dislocation of the lunate.

Because of limited time we are considering only those fractures of lower end of radius presenting the typical deformity of backward displacement of the lower fragment and radial deviation of the hand.

Colles first described his fracture as a transverse fracture of radius four centimeters from lower end with lower fragment mounting backward over lower end of upper fragment with so-called silver fork deformity, but we now use the term Colles in referring to all fractures of lower one and one-half to two inches of the radius in which the above deformity is entailed. This area represents the transition zone between

dense cortex of shaft and the cancellous lower portion, affording point of least resistance in the radius and most frequent point of fracture. (Slide.)

The normal contour of lower end of radius must be kept in mind to properly treat and splint fractures of this area. We call your attention to gentle convex posterior surface and the decided concave volar surface. In addition notice that the styloid process is at a definitely lower level than the styloid of the ulna, and that the articular surface faces slightly downward and inward.

Next to fractures of the fingers and ribs and possibly to the clavicle, fractures of lower end of radius are the most frequent of all fractures. Because of this frequency and because of the impairment of function in the hand and wrist which frequently follows this injury, it is of great importance economically. Every physician or surgeon who treats fractures at all should know thoroughly how to handle this particular one.

True Colles' fracture is rare and more frequently seen in young adults. In a large percentage of these cases there is more or less comminution of the lower fragment and this is especially true in patients beyond middle life where it is often broken into several fragments and one or more of the fracture lines may involve the articular surface.

"Impaction or at least entanglement of the fractured ends is the rule in these fractures with displacement, because the lower fragment is so broad that it does not clear the lower end of the upper fragment but is empaled upon it by the cortical bone of the shaft being driven into the relatively soft cancellous bone of the lower fragment." (Key & Conwell.)

Treatment: Complete relaxation on the part of the patient is essential for proper reduction of these fractures. Either a general or a local anesthetic may be used. Since using it frequently we are very fond of local anesthesia in these cases. When properly used it affords complete relaxation

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and lasts long enough for a second manipulation should this be necessary after splinting and X-ray checkup. In addition it lessens materially the amount of pain suffered immediately following reduction.

In the reduction of this fracture the counterextension, whether fixed or by an assistant, should be made on the arm and not on the forearm. In the transverse fracture with posterior displacement of lower fragment, Levis' formula of hyperextension at the site of fracture until fractured ends become engaged, then traction with ulna deviation and lastly, forced volar flexion. Following this procedure the normal contour is restored and the wrist flexes to its normal range. In this fracture a straight posterior splint as advocated by Dr. Duncan Eve is an excellent dressing.

In the badly comminuted and impacted cases of older age group, firm traction with molding of fragments, as between thumb and forefinger, then forced flexion is essential for proper reduction. This fracture is often difficult to reduce completely and is also difficult to maintain reduced during application of splint. We prefer a molded anterior and posterior plaster splint that encircles the elbow sufficiently to prevent pronation and supination of the forearm. The anterior portion is applied holding hand and wrist in marked ulna deviation and about twenty degrees of flexion. This allows the operator to hold the position, as well as being able to see the fracture site until this portion of the cast sets. The posterior portion is next applied, being made long enough to go from metacarpophalangeal joints to and around elbow on to anterior portion. These splints are then molded about elbow and forearm and fixed by a snugly applied bandage. It is essential to see the patient daily for the first three or four days following the fracture to guard against impaired circulation in case of excessive swelling.

To determine the completeness of your reduction prior to splinting check the following points:

(1) Silver fork and adduction deformities corrected.

(2) The styloid process of radius is at a lower level than the styloid of the ulna.

(3) The normal convex dorsal surface, as well as the definite volar concave surface has been restored.

(4) The head of the ulna is no longer abnormally prominent and the abnormal broadening of the wrist has been corrected.

On X-ray checkup see that the normal length as to relation of the ulna has been restored, and that the articular surface of radius slants downward or at least at a right angle to long axis of the forearm and that the space between the radius and the ulna is clear.

In the simple Colles three weeks' immobilization is usually sufficient, whereas, in the comminuted cases, they should be immobilized until local edema and tenderness directly over fracture site have disappeared. This usually requires five weeks.

In some of the badly comminuted and compressed types of this fracture there does not seem to be enough bone to maintain proper length of the radius and in spite of ideal treatment some permanent shortening and radial deviation results. This should be the exception though, rather than the rule when the fracture is properly reduced and held reduced until healing is obtained.

In some of the older age group a troublesome arthritis may develop in fingers and wrist and even in elbow and shoulder of involved extremity, but if recognized early, medication instituted, and physiotherapy is given by or personally directed by the surgeon over a prolonged period, this arthritis usually clears up without permanent disability.

Fracture of the navicular constitutes fifty-five per cent of all carpal injuries and occurs in relation as one to ten times as often as Colles. Because of their unfavorable prognosis and relative frequency, fractures of the navicular present an important economic problem. Also of injuries at the wrist, fracture of the navicular is the one most frequently overlooked.

Swelling and tenderness over wrist joint especially to radial side with tenderness to pressure over the anatomical snuffbox, as well as pain in this region to percussion on the end of the thumb usually means injury to this bone.

There are three varieties of fractures of this bone. The most frequent fracture is one occurring through the middle of the body or neck. This fracture is entirely intra-articular. The second variety is avulsion fracture of the tuberosity, which is extra-articular and usually heals satisfactorily in five or six weeks with bony union. The third type, much less frequent, presents a severely comminuted fracture with considerable deformity.

Early diagnosis in the intra-articular fractures is imperative, as failure to institute treatment immediately after injury proves to be one of the main factors in producing nonunion.

In fourteen cases that we have seen, only two cases were immediately following injury. The other cases varied from one week to four months following original injury before correct diagnosis was made.

Johnson, in a study of the healing process in fractures of this bone in a large series of dogs, did not feel that the joint fluid had any lytic action on these fractures and saw evidence of healing, only in much delayed action. He feels that all bones of cancellous type heal more slowly than long bones. This is due largely to lack of subperiosteal callus formation, but is also due in part to the cancellous reaction being much less extensive and less active than is the medullary response in the diaphysis. From his observations we see that there is a definite effort at healing of these fractures if given an opportunity to do so by proper splinting. (Slide.)

Anatomically and clinically navicular fractures are very much like fractures of neck or femur; indicating that similar methods in treatment should be applied. This similarity arises from the fact that both fractures are intra-articular, and devoid of periosteum and that the proximal fragment in each case is deficient in blood supply.

Treatment in the early cases and the late cases must vary materially but it does not seem advisable to use only element of time as a criterion as to procedure to adopt in treating these fractures, but more significant would be the position of fragments when seen, and X-ray appearance of frag-

ments as to viability, or as to amount of arthritis present, whether or not a pseudoarthrosis has developed.

In the early cases there has been much dispute as to position of immobilization of the wrist and the length of time for which such immobilization should be maintained. Most any position has been advocated, for example: "Volar and radial flexion" by Kellogg Speed. "Slight dorsal and ulnar flexion" by Bohler. "Volar and ulnar flexion" by Destot. "Forty-five degrees extension with slight radial deviation" by Berlin. Soto-Hall and Halderman advise circular plaster splint including forearm, hand, and fingers, holding the wrist in thirty degrees of extension with hand in complete radial flexion with thumb included and held in abduction and extension. The position and dressing advocated by Drs. Soto-Hall and Halderman at present time is probably most popular plan used and seems founded upon soundest anatomical principles. These men have devoted much time to fractures of this bone and have a large series with excellent results (fifty cases).

Because of so many of these cases being industrial cases, and the fact that the above plan practically completely disables the hand during the wearing of the splint, we tried a straight posterior splint in the last six cases. Two of them were recent and four of them were four weeks or older with complete bony union resulting in all cases except one of the recent ones. The splint must be well fitted and held snugly. It leaves the fingers and thumb free and four of the cases continued on their regular duties. If this plan proves to be as good as this small series would indicate, it offers much in the more chronic cases in which immobilization may be prolonged over twelve to sixteen weeks.

We would suggest the plan of Drs. Soto-Hall and Halderman as the most logical plan now in use, especially in the cases seen early following injury. They release the fingers in their splint after the fifth week of immobilization.

Drilling operations or bone peg graft operations are done in older cases where simple immobilization does not seem plausible due to displaced or separated fragments



or where pseudoarthrosis exists. The drilling procedure done through small incision over anatomical snuffbox, down to and exposing bone, seems most practical plan, since it gives a clear view of the field, ability to refreshen fractured surfaces where fibrous union exists. It allows proper reduction of fracture in cases with displacement. In cases with marked deformity or marked arthritic changes or with necrosis of one or both of the fragments excision is necessary. Following excision a plaster splint or dressing holding hand in complete ulnar deviation for a period of five to six weeks seems to lessen amount of radial deviation resulting after removal of navicular.

Two injuries are seen to the lunate. Most frequent is dislocation, and most of the time this is forward dislocation. Occasionally backward. The second injury is a compression of this bone to point of permanent injury to its blood supply followed months later with definite aseptic necrosis, the so-called Keinbock's disease.

The most common injury however is anterior dislocation where the bone can be felt very prominently on anterior surface of wrist under flexor tendons. Too frequently this injury is overlooked until the opportune period for best treatment has elapsed. Due to attachment of radiocarpal ligament this bone rotates from ninety to one hundred and eighty degrees and when seen in X-ray is often reversed from its normal position.

Up until recent years all efforts at closed reduction of this bone have been based on force, but we feel sure that this is a mistake and we use a plan based more on manipulation than force. In six cases seen early after injury we successfully reduced them.

The plan is as follows: General anesthesia. With thumb directly over bone while making traction at wrist in hyperextension and ulnar deviation to open up space for lunate, the bone is rocked upward and downward in effort to correct the rotation. If this is successful the bone can be felt to move slightly under your thumb. By flexing the wrist while maintaining pressure over lunate it slips back into place. A molded plaster dressing is applied holding

wrist in flexion for two weeks then straight position for two weeks.

A similar plan is described as the thumb method by Dr. Conwell of Birmingham, and was published in the last edition of Key & Conwell's book on fractures.

In none of the cases thus reduced has there developed any aseptic necrosis nor has there been any residual disability.

In the recent cases where closed reduction fails an open reduction should be attempted. Old cases and those with marked displacement excision should be done.

Excision of lunate is not as crippling to the wrist as is excision of navicular. End results however, following excision of these bones, seems to vary materially with the individual cases. In one case no radial deviation is noticeable, yet in another there is definite weakness and mild pain. Most all agree that excision offers a compromising result and is not done unless there is contraindication to more conservative plans.

#### CONCLUSION

(1) A complete review of more recent work done on injuries to the three principle bones of the wrist joint has been given you.

(2) A practical and anatomically sound plan of treatment for Colles' fracture of the radius, fracture of the navicular and dislocation of the lunate has been presented for your consideration.

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## DISCUSSION

DR. DUNCAN EVE, JR. (Nashville): The Colles' fracture is one of the most important fractures with which a physician deals. First, because of its frequency, and second, because of the deformity which so often follows.

The lower end of the radius is composed of a mass of spongy tissue; therefore, they are frequently impacted. In old persons the fragments are often comminuted. Do not overlook a fractured scaphoid bone when the X-ray plate is negative for Colles' fracture.

In the normal wrist the angle of the articular surface of the radius with its shaft when measured on anterior and posterior X-ray plate is about 130 degrees. When fractured this is reduced to 100 degrees or even ninety degrees. Lateral view, the angle of the articular surface of the radius is about ninety degrees. When inclined the angle is increased to about 120 degrees.

Before treatment always examine the hand for any evidence of nerve injuries. A frequent complication is injury to the sensory branch of the radial nerve, which supplies the dorsum of the thumb and the radial side of the hand. The nerve is stretched by the displaced lower fragment. With marked displacement also, the median nerve may be injured by the upper fragment. However, these injuries usually clear up in a few weeks and require no special treatment. I prefer the traction and molding method. Traction is applied until the fragments are disengaged and the lower fragment is then molded into its normal bed. With the patient on a table, a few layers of adhesive plaster one-half inch wide are placed around the thumb, index and middle fingers, making a nonslipping surface for traction. Countertraction cannot be obtained unless the arm is fixed; therefore, the arm is brought out to ninety degrees of abduction and the elbow is flexed to ninety degrees. The palm of the hand is toward the floor and the arm and forearm are held parallel to the floor. A towel is placed around the anterior surface of the arm to serve as padding for a broad sling which is passed around the arm. The ends of the sling are given to an assistant standing at the head of the table for countertraction.

After local anesthetic the thumb is grasped with one hand, and the index and middle fingers with the other hand, and longitudinal traction is made until the fragments are separated, which requires a few minutes. After the fragments are separated the traction is turned over to an assistant, and with the thumb on the dorsal surface the fragment is molded into position. The assistant holds the wrist in position of abduction and slight flexion and maintains traction until splinting is completed. Plaster of Paris splints, about ten strips and four inches wide and long enough to extend from the knuckles to just below the elbow, are used. The moist splint is placed on the dorsal surface and is molded and the splint is immobilized by a gauze bandage.

Whatever form of immobilization is used insist on full movements of the shoulder, elbow, fingers, and thumb throughout the course of treatment.

Colles' fractures occurring in old people, which are badly comminuted, may be followed by delayed union. This is undoubtedly due to destruction of bone cells at the end of each fragment, which is followed by loss of bone substance and results in deformity. In my opinion, more deformity is produced when reduction is by Levis' method.

Carpal bone fractures are seldom, as they are small and articulate together freely. These fractures unite slowly; therefore, the wrist should be immobilized in plaster from the palmar crease to the elbow. The cast should be maintained from five to eight weeks. During this period the patient should use the hand as much as possible. The circular cast is the choice because it gets closer apposition to the fragments.

DR. GEORGE K. CARPENTER (Nashville): Mr. Chairman and Gentlemen: Doctor Brown has given us an excellent paper. I feel that we do not fully appreciate the seriousness of injuries about the wrist joint. A Colles' fracture is, of course, a very frequent fracture and one which is prone to result in deformity and disability. These cases should be reduced under anesthesia and in most instances novocaine infiltration anesthesia is the anesthetic of choice. If the patient is seen within a short while after the injury, local anesthesia is excellent. If the patient is not seen until several hours have elapsed or until the next day, local anesthesia is often ineffectual.

This is one fracture which must be adequately reduced and splinting must be effectual. I am sure that reduction is frequently lost as a result of ineffectual splinting. I use anterior and posterior molded plaster splints with the wrist in slight flexion and rather marked ulnar deviation. Needless to say, X-rays after reduction should be made in all cases. In the simple cases splints may be removed in three weeks, but so many of these cases are comminuted in older individuals; and in these cases it is unwise to remove the splints until five, six, or seven weeks have elapsed, depending upon the severity of the fracture. It is my rule never to remove the splints until union has been obtained. Function cannot be hastened by periodic removal of the splints for the purpose of motion and massage. A good reduction followed by solid union is the best method to restore early function.

I have enjoyed Doctor Brown's remarks relative to both fractures of the navicular or scaphoid and dislocation of the lunate or semilunar. I feel that the majority of our cases of nonunion following fracture of the scaphoid are the result of either failure to recognize the fracture early or failure of the surgeon to employ adequate fixation for a long enough time. Fixation should be employed until the fracture unites or until such time when nonunion is accepted. Doctor Brown is to be particularly congratulated upon his method of reduc-

ing these very difficult dislocations of the carpal semilunar. I am quite positive that his method is the treatment of choice. I wish to thank Doctor Brown for presenting to us this very important subject.

DR. W. J. SHERIDAN (Chattanooga): Members of the State Association: It is always a pleasure to hear a paper like Doctor Brown's, a paper which deals with such a common type of injury. All of us are apt to have it presented to us at any time.

I should like to call your attention to a complicated injury which so frequently occurs with fractures at the lower end of the radius. The lower end of the radius and the lower end of the ulna are in apposition through the so-called radio-ulnar joint. Injuries to this joint are very disabling. The two bones are held together by the triangular fibrocartilage, the apex of this triangle being attached to the styloid process of the ulna, and the base of this triangular fibrocartilage to the medial surface of the radius.

If you will look at your own wrist for a moment—and I much prefer this to the X-ray—you will notice, first, the width of the wrist; secondly, you will notice the extreme prominence of the lower end of the ulna on the dorsal aspect. You will further notice a point which Doctor Brown called your attention to. By putting your thumb in the anatomical snuffbox, you find that the lower end of the radius is approximately three-quarters of an inch longer than the lower end of the ulna. When this joint is injured, as so frequently happens in fractures of the lower end of the radius, by inspection you will notice immediately a broadening of the wrist. You will also by palpation be able to note what Doctor Brown called your attention to—that the length of the radius and the length of the ulna approximate each other rather than the radius being about three-quarters of an inch longer than the ulna. You will also notice that the dorsal prominence at the lower end of the ulna has disappeared, and you will notice a tremendous amount of mobility between the radius and ulna at the wrist.

The treatment of this injury is simple. Its recognition is the important factor. When the cast is applied, as Doctor Brown has already told you, the only way that you can immobilize a radio-ulnar joint is by having the plaster go around the elbow. This is accomplished by use of the "sugar-tongs" splint. By doing this pronation and supination of the forearm are prevented, and usually in about three weeks' time this joint will heal. It is not at all uncommon in estimating percentage of disability in medicolegal cases to find that the doctor who has treated the case says that he never has seen better union in this type of fracture, that everything is fine, that there is no disability. He shows his X-rays to prove this point, and, true the position looks good, the callus is excellent, but if you will look at the patient's wrist in this type of injury, this so-called disintegration of the wrist joint, you

will find this broad, weak wrist. This constitutes a permanent disability and one that causes a great deal of trouble for the patient. I am bringing this point to your attention in order that you will not overlook it and in order that when you apply your plaster in these cases where you suspect it, you will put on the so-called sugar-tong splint around the elbow.

Fractures of the carpal bones are not quite so common. My face was red about four or five years ago when I read a paper on this subject before this society here in Nashville. I showed a fracture of the scaphoid. It had come into me a month after the injury had occurred. I kept this wrist in plaster for eight months. I demonstrated to you on a slide and in the X-ray films the perfect healing in this fracture. Some three years later I happened to run into this gentleman who carries ice by trade and he had no disability, according to his own statement. I X-rayed the wrist just to see what it looked like, and, gentlemen, the fragment that had broken off had completely disappeared; he had a complete osteoporosis. Don't always judge your end results the first time you X-ray your patient after he comes back.

DR. R. C. ROBERTSON (Chattanooga): I have no desire to attempt a detailed discussion of the very excellent presentation which Doctor Brown has given us of three of the commoner types of wrist fracture and dislocation. There are two points, however, which I feel might well be emphasized. Many of us are inclined to regard a Colles' fracture as a simple injury and one easily treated. Frequently that is true. Not infrequently it is untrue, and particularly is it untrue in elderly persons who have extensively comminuted fractures extending into the wrist joint. In my experience it is often impossible to obtain the result which we would like to obtain following the treatment of this severe type of injury. I feel that in many cases much of this disability is the result of the extensive comminution resulting from the dorsal displacement of the distal fragment, which must of necessity extensively comminute a wedge-shaped area of bone, the base of which is toward the apex. Unless precautions are taken to completely restore and maintain the length of the radius in this type of fracture, a very frequent end result is shortening of the bone with radial deviation and with rather marked traumatic arthritis. I have found that frequently this may be prevented by including some type of traction to the thumb in addition to a molded plaster cast of the type which Doctor Brown prefers. Frequently adhesive traction, holding the thumb in extension or not infrequently skeletal or pulp traction, will be of decided benefit in maintaining radial length. In my hands, it has repeatedly proven an effective aid in preventing the above disabilities.

The second thing which I think should be stressed is this. We must not only obtain union in the fracture; we must also preserve function in the

extremity. The surest way of failing to preserve function in the extremity is to apply a splint which goes to the tip of the fingers and then allow the patient to hug the extremity to the body as so many of these patients love to do. Part of my instruction to every patient with a fractured wrist is this: Four times daily you must place your arm over your head, ten times each; four times daily you must clench your fingers tightly, ten times each. I think this undoubtedly does much to prevent the shoulder and finger stiffening which not infrequently follows the treatment of what we originally considered a simple fracture.

DR. R. R. BROWN (closing): I wish to thank Doctors Robertson, Carpenter, Sheridan, and Eve

for their discussions. Doctor Sheridan was very kind to bring out the point about injuries to the triangular fibrocartilage which very commonly occurs.

In Doctor Eve's discussion he mentioned the fact that by Levis' formula of hyperextension the deformity may be increased. If the doctor listened closely he heard me say that I use hyperextension only in the transverse fractures with no comminution, in which the lower fragment was overriding the lower end of upper fragment; but in the comminuted cases traction was the main force to get the necessary reduction, plus forced flexion to assure correct tilt to articular surface of radius.



## GASTROINTESTINAL HEMORRHAGE\*

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Bleeding from the gastrointestinal tract is a symptom of numerous pathological conditions and manifests itself in a number of different ways. To cover the entire subject in a short paper is beyond the realm of possibility, so we will only mention those conditions in which the diagnosis and treatment are well established and devote more attention to lesions about which there are controversial opinions.

Gastrointestinal hemorrhage may become evident either through vomiting of blood or its passage in the stool. The character of the vomitus or of the stool is significant in indicating what portion of the gastrointestinal tract is the source of the bleeding. If bright red blood is vomited in any quantity, it is an indication of rather rapid profuse hemorrhage from the upper gastrointestinal tract. If the vomitus is dark or of coffee ground character, it signifies that the bleeding from this region is more gradual. A dark, tarry, sticky type stool usually means bleeding from high in the intestinal tract or stomach. Passage of dark red blood is usually from a lesion in the colon, while if the color is bright red, it is thought to arise near the anus. These are the usual deductions formed, but there may be variations. For instance, a massive hemorrhage from high in the gastrointestinal tract may appear dark red and not mixed with feces, having passed through the intestines rather rapidly.

The most common causes for bleeding from the intestinal tract are hemorrhoids and fissures. These lesions cause bleeding usually immediately following defecation and the color of the blood is bright red. The finding of such lesions should not, however, preclude a thorough investigation of the lower colon since a coexisting condition such as rectal or rectosigmoid malignancy may be present. If there is a history of blood in the stools associated with constipation alternating with diarrhea, colic, and flatulence, one should suspect an obstructing

lesion of the colon. Such a condition may be confirmed or ruled out with an X-ray following a barium enema. Polyps of the colon are frequently the source of bleeding and are often discovered by inflating the colon with air after the barium has been expelled and making an X-ray; or if in the rectosigmoid, they may be seen through the proctoscope. Tenesmus and frequent diarrheal bloody stools mixed with mucus and a history of repeated attacks lead to a suspicion of ulcerative colitis. Proctoscopic and X-ray examinations usually establish the diagnosis. In recent years a number of cases have been reported in which gastrointestinal hemorrhage has been proved to be due to ulcer of Meckel's diverticulum. This comparatively rare condition should be borne in mind in any case of bleeding from the bowel the cause of which cannot be otherwise explained.

Brief mention should be made also of a few other obscure causes of bleeding due to pathology originating outside the gastrointestinal tract. Blood dyscrasias such as hemophilia and leukemia not infrequently cause fatal hemorrhages. Portal cirrhosis and splenic anemia may produce extensive bleeding from varices in the esophagus and stomach. In the latter two conditions when gastrointestinal hemorrhage is a symptom, the process is sufficiently far advanced to make the diagnosis evident.

Hemorrhage from the stomach and duodenum is said to be due to intrinsic gastroduodenal lesions in ninety per cent of cases. According to Snell in a review of 688 consecutive cases of hematemesis, the distribution of this ninety per cent is as follows: duodenal ulcer fifty-seven per cent, secondary anastomotic or recurrent peptic ulcer fourteen per cent, gastric carcinoma twelve per cent, gastric ulcer six per cent, and a group of miscellaneous lesions of the stomach including benign tumors and polyps one per cent. It is interesting to note the wide variation of statistics compiled by different authors in regard to hemorrhage from peptic ulcer and one is reminded of the much-used aphorism that "anything

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can be proved by statistics." On closer analysis, however, these variations in many instances are more apparent than real. For example, if the incidence of hemorrhage from peptic ulcer is taken from a group of hospitalized patients, it will be much greater than if one considers a group of patients with peptic ulcer treated in private practice, most of whom were ambulatory. Kruse in reviewing 575 cases of peptic ulcer found an incidence of hemorrhage of twenty-eight per cent while Collins and Knowlton found that massive bleeding occurred in only 3.8 per cent of 2,620 cases.

The mortality from bleeding peptic ulcer is another point on which there is a great deal of difference of opinion, either extreme of which is apparently adequately supported by statistics. I quote from a paper by Snell: "Figures for the mortality rate of individual gastroduodenal hemorrhages arising from peptic ulcer, however, cover the widest possible range and are for this reason extremely difficult to interpret. Babey's figures are a case in point; he cited mortality figures from one to twenty-five per cent in various hospitals of Europe, Great Britain, and the United States. The most probable explanation for these wide variations is that in some hospitals only patients with the more serious degrees of bleeding are admitted, whereas, in others, all patients who show any signs whatever of loss of blood are taken into the hospital for observation. In order to get any accurate figures for mortality it would, therefore, be necessary to classify hemorrhages on the basis of their severity." It is evident, therefore, that we cannot accept statistics at their face value since it is not likely that so great a variation could actually exist.

The clinical picture of bleeding peptic ulcer is too well known to require elaborate description. With a moderately severe hemorrhage there may be hematemesis or melena, or both, pallor, profuse sweating, cold clammy skin, faintness, rapid thready pulse, and low blood pressure. There may or may not be an increase in the severity of ulcer symptoms prior to the hemorrhage and in some patients a previous ulcer history cannot be obtained. In regard to the hematology of gastric hemorrhage, Ervin

states that the percentage of erythrocytes, hemoglobin, and plasma protein remain practically the same for six to eight hours even though the total volume of blood may be markedly diminished. After this period of time the hemoglobin and red blood cells drop rapidly for about twenty-four hours. His observation is that no laboratory procedures are so important as seeing the patient. A close watch of the patient's blood pressure and pulse gives the best index for determining the presence of continued or recurrent bleeding.

The treatment of bleeding peptic ulcer requires first of all individualization and no routine management should be carried out in all cases. The degree or extent of the hemorrhage is an important factor in deciding on the type of treatment. The lesser degrees of bleeding require little treatment other than rest in bed and restriction of the diet; with this practically all are in accord. It is in the cases of severe hemorrhage that there is a great deal of controversy and here again we find the proponents of sharply differing methods of treatment offering statistical data to prove the efficacy of each method.

In determining the prognosis in any case of massive hemorrhage the single most important factor is the age of the patient. It is a well-established fact that the mortality from bleeding ulcers is far greater in patients past fifty years of age. Kruse has observed that fatal hemorrhages in patients over forty as compared with those in patients under forty bear the ratio of eight to one. Allen found a mortality rate of thirty-three per cent in cases of massive hemorrhage in patients over fifty years of age. This fact emphasizes the importance of individualizing treatment, and each case should be considered separately, weighing carefully the many factors involved.

Mental and gastric rest must be obtained by the administration of adequate amounts of opiates or barbiturates and nothing is allowed by mouth. Morphine and atropine should be given at first and the former drug repeated at intervals often enough to keep the patient quiet. If nausea is produced by morphine, the desired sedation may be accomplished by administration of barbitu-



rates. I do not believe a nasal tube introduced into the stomach to evacuate its contents is of any value, but it probably does no harm, unless it produces restlessness in the patient. The patient should be kept warm, and if any degree of shock is present, the foot of the bed may be elevated.

Donors should be obtained and held readily available. The question of transfusion is one about which there is considerable disagreement. It is not likely that a transfusion, if given very slowly, will raise the blood pressure sufficiently to dislodge a clot formed at the site of hemorrhage; however, this is the contention of those who condemn the procedure. Transfusions given in small amounts of 200 cubic centimeters repeated as often as is deemed wise will, I believe, benefit the patient to the extent that the hazards, if any, of such a procedure can be overlooked.

Fluids may be supplied by a rectal drip, hypodermoclysis, or intravenous drip. Unless there is a rather severe degree of shock, it is probably better to withhold all fluids for the first few hours since they tend to decrease the viscosity of the blood.

Coagulants such as hemostatic sera and whole blood injected intramuscularly may be used, but are of questionable value. The introduction of astringents into the stomach probably does more harm than good and is not recommended. Most patients will respond favorably to this form of treatment, but there remains the small group in which bleeding continues or recurs. It is of course impossible to determine definitely which patients will fall in this group when they are seen soon after the onset of the hemorrhage. On the other hand it is agreed by those authorities who advocate surgical intervention to control the bleeding that after forty-eight hours from the onset the mortality rate is extremely high. Therefore some attempt must be made to classify these patients so that if operation offers a greater chance of recovery it may be carried out within the first forty-eight hours. In order to do this a few general rules must be laid down subject to variations since as stated before it is essential to individualize the treatment in each case. (1) In patients under fifty years of age surgery is seldom

if ever indicated during the active bleeding. Conservative management with subsequent medical therapy should be carried out. If the ulcer does not respond to treatment after a thorough trial, then surgery should be considered. Allen states that an ulcer which has bled once has a forty per cent chance of recurrent hemorrhage. (2) If severe bleeding has occurred two or more times in patients under fifty, conservative treatment should be employed, but as soon as the patient's general condition will permit appropriate surgery should be done to prevent a further recurrence. (3) Patients over fifty who do not respond favorably to conservative measures in the first twelve to twenty-four hours and show evidence of continued hemorrhage probably should be subjected to surgery. This type of patient will usually have an erosion of an artery and due to the presence of arteriosclerosis there is much less chance of cessation of bleeding with conservative management than in patients under fifty. (4) Patients over fifty who have recovered from a severe hemorrhage under nonsurgical management should remain under strict supervision, and unless definite evidence of healing of the ulcer can be demonstrated, surgery to eradicate the lesion should be advised.

The foregoing statements are not to be considered as hard and fast rules, but are mere generalizations which may help in making a decision as to the best method of treatment for any given patient with massive hemorrhage from peptic ulcer. In the final analysis the decision as to which cases must be subjected to surgery to arrest hemorrhage rests on that intangible something which we call surgical judgment. This decision is probably one of the most difficult a surgeon is called upon to make. On the one hand, unless there is a fairly definite history of ulcer, it is possible that on exploration none will be found and the hemorrhage is due to some other cause. Then too if a large ulcer is found, it is difficult to control the bleeding by suture due to the friability of the tissues, and cauterization of the site of the hemorrhage is often inadequate to control it. Although resection is a formidable procedure even under the most propitious circumstances, it has been used



successfully in many such cases if it is done in the first twenty-four hours following the onset of bleeding. Finsterer has reported five consecutive cases of massive hemorrhage in which operation in the first twenty-four hours resulted in recovery. Radical resection was done in four and excision of the ulcer in one.

On the other hand one is faced with that a small group of patients exists who will have a fatal termination unless some procedure is carried out to arrest the bleeding. Let me emphasize again that this group is comparatively small and if surgery is done promiscuously in cases of hemorrhage the gross mortality rate will be much higher than if nonoperative treatment was carried out in all cases.

### SUMMARY

1. Gastrointestinal hemorrhage is an important symptom which if properly interpreted and evaluated will materially improve the accuracy of diagnosis and treatment.

2. Hemorrhage from the stomach and duodenum is due to peptic ulcer in about seventy per cent of cases.

3. Conservative treatment consisting of mental and gastric rest, transfusions properly administered, parenteral fluids, with close observation will result in cessation of bleeding in practically all patients below the age of fifty.

4. In a small percentage of patients over fifty surgical intervention will be necessary if hemorrhage is not controlled in the first twelve to twenty-four hours.

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### DISCUSSION

DR. R. G. WATERHOUSE (Knoxville): Mr. Chairman and Members of the Association: Doctor Malone has covered all of the essential points in the treatment of bleeding from the gastrointestinal tract. What few remarks I make will be about bleeding from the stomach and duodenum.

I think it is well to consider the types of ulcer that we have to deal with, and from the surgeon's standpoint a very good pathological classification is the simple ulcer, the penetrating ulcer, and the callous ulcer. The simple ulcer is the one that is seen usually in young people, and although it frequently bleeds, the bleeding from the simple ulcer is rarely fatal. The penetrating ulcer may either bleed or penetrate or it may heal. The callous ulcer is the one that so frequently bleeds. The callous ulcer is usually found in the posterior portion of the stomach and particularly in the posterior portion of the duodenum. The posterior wall of the stomach and the posterior wall of the duodenum cannot contract in healing, and therefore we get an enlarged callous ulcer.

If, in addition to this, we have an individual past the age of forty, with arteriosclerotic changes in his vessels and an erosion of one of those vessels, we tend to have prolonged bleeding. It is this type of ulcer that is dangerous.

Since the use of the gastroscope, we know that we have other conditions which cause bleeding, and which can cause massive gastrointestinal bleeding, particularly the hemorrhagic type of hypertrophic gastritis. Frequently, in cases of ulcer, though the ulcer is present in one part of the stomach, the bleeding may come from another part of the stomach which is affected by the hypertrophic gastritis. This type of lesion may account for the cases that in the past have been operated for massive hemorrhage and no point of hemorrhage found. It is important, if we are going to open up an abdomen for hemorrhage, that we be

sure there is an ulcer or surgically remedial lesion present in that stomach.

As you have found, fatal hemorrhage is not usually the first hemorrhage. These patients have had trouble for some time and have frequently had hemorrhages.

We know in hemorrhages from other conditions that the most efficient treatment is replacement of the lost blood. In any case of hemorrhage from the gastrointestinal tract, the first indication is a transfusion, no matter whether you know where that hemorrhage comes from or not, because if that blood is replaced the patient will then be in better shape to withstand another hemorrhage if it occurs.

Cancers of the stomach may hemorrhage, but rarely massively, and it is rather infrequently that a patient dies of hemorrhage from a malignant lesion of the stomach.

As Doctor Malone pointed out, these lesions are not so simply repaired surgically as one might think. When you go in to stop a hemorrhage from a stomach you must be prepared to do a radical resection.

Frequently these bleeding ulcers are not just simple, single ulcers; they are often the so-called saddle ulcer on both the posterior, superior, and anterior wall, and the kissing ulcer on both walls of the duodenum.

(Slide) The first slide merely shows the normal gastrosopic picture of the pylorus with the antrum above it, and this is the most frequent site of gastric ulcer along the lesser curvature in the stomach and the posterior wall.

(Slide) This shows a penetrating type of gastric ulcer, almost penetrating at that point. This is taken two weeks later, this one three weeks later, and this one three months later, showing almost complete healing of that ulcer.

If you have a gastric ulcer that does not show healing or in which you are suspicious of malignancy, I think that ulcer should be resected, whether or not there has been any history of bleeding, and if you will resect those you will not lose your gastric ulcer cases from hemorrhage. By that, I mean the gastric ulcer which does not respond to treatment is surgical.

(Slide) This shows the hypertrophic type of gastritis that I was talking about with the marked submucosal hemorrhage that can give rise to massive hemorrhage. Here we have massive ulceration on one of the folds with hypertrophic changes between the folds.

(Slide) Here we have the type of ulcer that is malignant. You notice the raised edges around this ulcer and the very dark bottom.

(Slide) This is a marginal ulcer. These are the typical Kerkring folds of the jejunum. A marginal ulcer has developed here. You can see the pus here in the hemorrhagic areas. That also is a very frequent cause of bleeding.

(Slide) This is the X-ray picture of a prepyloric ulcer. Here is the same picture as seen by the gastroscope. This is merely a normal pylorus.

This is the autopsy specimen taken twenty-one days later, and here you can see possibly a blood vessel sticking up which was the cause of the fatal hemorrhage.

DR. J. M. HIGGINBOTHAM (Chattanooga): Mr. Chairman and Gentlemen: Certainly nature has been a most kind and thoughtful aid in the preservation of both humans and animals by giving blood a color. We all should realize that red is a danger signal. A red flag or red lights have been accepted by humans for many years as danger signals. No doubt the derivation is from the color of blood. Small children instinctively are afraid of blood. Grown men and women faint at the sight of blood. Certainly there isn't anything that gives a patient a more uncomfortable or startling sensation than to feel a mouthful of something and then vomit and spit up a mouthful of blood nor to feel the desire to evacuate the bowels and pass a large amount of blood. There is nothing that will bring a patient to a physician's office any quicker than the passage of blood from one of the body orifices. If it were colorless like water, I doubt that this would be the case. Certainly it is a fortunate circumstance that most malignancies bleed because bleeding brings a patient to see a doctor.

Often many of us are entirely too dilatory when patients come and say: "Doctor, I have vomited a little blood" or "Doctor, I have passed a little blood in my stool." We are prone to say: "Well, it doesn't amount to anything. Don't worry about it unless it gets worse." Right then and there is the time that that patient should be thoroughly examined as was so capably brought out by Doctor Malone.

The question of surgery in bleeding ulcers or gastric hemorrhage is one of the most controversial questions in modern-day surgery. We are going through a period of work and discussion along the lines of radical surgery in cases of gastric hemorrhage.

I came across an article by Graham of Toronto that I would like to read: "The surgeon must assume responsibility for advising and preparing these patients for operation and for the patient's death if such occurs. He determines the type of operation by knowing the physiological and biochemical possibilities associated with ulcer—that is, bleeding and the late results after various procedures. He must choose the type of operation which is mechanically sound, and, if possible, results in relative achlorhydria. He should realize that operation is only an adjunct to management of such cases. He must have a well-organized follow-up clinic to assist in the rehabilitation of such patients by aiding the mental and physical adjustments to a new routine of life. In other words, the surgeon treating patients for gastroduodenal ulcer with hemorrhage, or without for that matter, must be a physiologist, a biochemist, an internist, a psychologist, a psychiatrist, and a statistician as well as a surgeon in order to obtain the best possible end results."



That is a fairly alarming situation if a man is to say: "Well, have I surgical judgment enough to determine whether this bleeding ulcer needs surgery?" There are a few simple rules, as Doctor Malone pointed out, which aid us a great deal in this determination. Here is one place where surgical ability vies with surgical judgment. Given two men of the same surgical judgment, one an average operator, the other a skillful operator, the average operator is going to lose his gastric hemorrhage cases that he operates on.

There are a number of procedures that are being advocated at the present time. Certainly a man must be prepared when he enters an abdomen that has a bleeding ulcer, if the diagnosis is made as ulcer, to resect that stomach if necessary.

There is no point in doing a gastroenterostomy in a duodenal ulcer that is bleeding. That does not stop the bleeding. Almost all of these cases die as a result of ulceration into the pancreaticoduodenal artery. Unless you ligate this artery in normal tissue the bleeding is going to continue. If a resection of the ulcer only is done, either by cautery or knife, a gastroenterostomy is at times beneficial and at other times curative, but unless a person is able to resect the stomach and to care for the bleeding, his mortality is going to be much greater if he operates these cases than if he lets them alone.

I have heard the statement made here several times that most of these cases die as a result of repeated hemorrhages. Allen in Boston found that almost fifty per cent of the ulcers that died from hemorrhage died from their first hemorrhage; most of them were patients over fifty years of age with arteriosclerosis, with heart disease, with other causes certainly. These are the patients who cannot stand a large amount of blood loss. Doctor Allen has devised a handy method for handling these ulcers. He transects the stomach in the middle and opens the distal portion, using his finger as a tampon against the bleeder, and removes the lower portion of the stomach first, which very satisfactorily controls the bleeding. The question of diagnosis has also been settled by him and his coworkers fairly satisfactorily. If they do not have a history or previous diagnosis of ulcer, they wash out the patient's stomach and X-ray him following barium ingestion and find the ulcer in a large number of cases, which is a very helpful procedure in their hands.

I enjoyed and appreciated Doctor Malone's paper very much.

DR. R. L. SANDERS (Memphis): Mr. Chairman, all of the speakers have referred to the fact that we have to be more or less general in our statements, but having been through this game for more than thirty years and having seen the treatments of various sorts with reference to gastric hemorrhage, I think that possibly some of us older men have had the opportunity gradually to begin to draw some more definite and specific conclusions as to what seems to be best.

I am going to limit my remarks, because of time, to three phases of what has just been said, namely, the incidence of hemorrhage (and I am speaking now particularly of duodenal ulcer hemorrhage, which is the most frequent); second, diet during the active hemorrhage, or I might say the feeding; and, third, how best to handle the case that is bleeding.

In a series of a little more than 1,200 duodenal ulcers in our clinic, we have found that 26.6 per cent of our duodenal ulcers, proven, have bled once or more, sometimes as many as a dozen times, a little more than one out of four.

Up until two years ago we practiced superlative do-nothingness as to feeding an active hemorrhage, treating by keeping the stomach perfectly quiet, taking the lead from some of the men who fed their patients on a semisoft diet during the hemorrhage, under the belief that we could control pylorospasm and control the acidity. We have been surprised at our results if we feed the patient right along during the hemorrhage, and I believe in the last two years we have had some ten or more cases that we have been able to control satisfactorily.

Since the problem of vitamin K has come up and we have it synthetically prepared so we can give it intravenously, we run the prothrombin time (most of them have a low prothrombin time) and we give the vitamin K intravenously; it is amazing, in some cases, how we have seemed to control it in that way. We have now reached the point where we are giving it almost routinely in our cases of hemorrhage from the upper intestinal tract.

The third thing I want to mention is the question of how best to handle the ulcer after it has bled once or more. A fair number of them, in fact most of them, do not have a fatal termination if they are under a certain age, and that is quite true in our experience. A lot of them bleed once and do not bleed any more, but a high per cent of them will continue to bleed from time to time. Practically all ulcers of the duodenum that we have seen have been on the posterior wall, as has just been indicated by the previous speakers, and they perforate into the head of the pancreas and catch the large vessels. Anterior ulcers perforate out into the general peritoneal cavity; posterior ulcers perforate into the vessels and bleed. When we see a hemorrhage we are almost certain that the hemorrhage is posterior. As one of the speakers said, a gastroenterostomy is futile from the standpoint of offering the patient assurance as to the curability of his hemorrhage by doing a short-circuiting operation, therefore we have abandoned it. Also we have abandoned pyloroplasty. Formerly we opened the pylorus, cauterized the posterior wall, closed it from within, and many of those patients developed ulcer again, some of them at the site of the pyloroplasty. The last fourteen or fifteen of these that we have had in succession have been of the bleeding type. I have two or three of them in the hospital now. They have all been of the pos-

terior wall, and strangely enough they have practically all been multiple. When you begin to look, you will find that nearly all duodenal ulcers, particularly of the bleeding type, are multiple ulcers, one in front and a larger one posteriorly.

My own impression from personal experience over a long period of time is that the way to answer that problem and offer the patient assurance from future bleeding and safeguard him against the catastrophe of massive hemorrhage and loss of life is by gastric resection. If it is done after proper, adequate preparation, and skillfully taken care of, with a good anastomosis made for proper drainage afterwards, the mortality should be reasonably low. I believe that we will settle this problem and are settling it right along now as we go. The posterior bleeding ulcer must have a resection; whether he is thirty-five, forty, forty-five, fifty, or fifty-five makes no particular difference since he is having repeated hemorrhages.

I am glad to say, Mr. Chairman and Gentlemen, that the results thus far in a series of cases we have had over a period of two years have been exceedingly satisfactory and the postoperative morbidity has been proper, the patients have gotten along well, and I believe in resection, particularly getting the pylorus out of the way. We usually resect about sixty to seventy per cent of the stomach, getting rid of the acid-bearing portion of it, and in that operation we have the solution, I believe, of our problem of perforating ulcers on the posterior wall.

DR. BATTLE MALONE, II (closing): Mr. Chairman and Gentlemen: I am glad that Doctor Waterhouse did mention the hypertrophic gastritis

as a cause of bleeding. That definitely exists, and although it does not occur in a high percentage of cases, it should be borne in mind as a cause, because, of course, surgery in this type is usually futile since the hemorrhage is from several points and no one point is the cause of bleeding.

In the Lahey Clinic, Doctor Cattell regards the surgical treatment as futile in so far as attempting to ligate and also attempting to cauterize the bleeding point is concerned. The point that he brought out recently was that in doing a resection, often the ulcer is necessarily left in place; that it is not always possible to remove the ulcer, but if it is of the duodenal type the duodenum can be lifted up and the vessels ligated as they enter the ulcer site, and in that way control the bleeding.

Doctors Higginbotham and Sanders both mentioned the futility of gastroenterostomy in bleeding ulcers. Of course, that does not do anything to control bleeding and is not indicated. In most cases in which surgery is done, if one of the aforementioned procedures is not feasible, then gastric resection is usually necessary.

In regard to the ulcer patients who have had ulcer symptoms for a great many years and have probably been on a self-imposed diet which has been modified by a diet given them by a physician, very often this diet is deficient in vitamins and, as Doctor Sanders brought out very well, it may be that vitamin K is an important factor in reducing the bleeding tendency. If sufficient amounts of vitamin K can be administered to increase the amount of prothrombin, the bleeding may be much better controlled.



## ACNE VULGARIS\*

HOWARD KING, M.D., and C. M. HAMILTON, M.D., Nashville

Acne vulgaris is an eruption involving the oil glands of the face, chest, shoulders, arms, back, and hips of young people, and occurs in more than fifty per cent of the population between the ages of twelve and thirty. It is characterized by oily, murky skin, large pores, comedones, papules, pustules, nodules, cysts, scars, and seborrhea. It is often looked upon as an insignificant, commonplace, and trivial malady. When considered from a broad common sense point of view, it is often found to be a very serious stigmatization causing disfigurement, pocklike scars, and even contractures of the face and neck. It sometimes develops into a social and economic handicap as well as a psychologic problem.

The initial lesion of acne is a comedo or blackhead consisting of a plug of fatty and cellular material which obstructs the outlets to the oil glands of the skin. Many of the deposits of sebaceous material cause inflammatory reactions which result in papules that later break down into abscesses. If the reaction is mild, gradual pressure from the secretion of sebum may cause large cystic lesions. The morphological classification of lesions will not be discussed in detail. Acne is frequently associated with seborrheic involvement of the scalp. The two conditions are closely related in that they are both diseases of sebaceous glands.

Acne is usually described as a condition having a multiplicity of etiologic theories. A few observers are inclined to the infectious premise since organisms of a specific type are present in a high percentage of instances. However, staphylococci and other bacteria are usually associated in the pustule with the so-called acne bacilli. Others take the position that the comedo is the result of faulty metabolism of fat, believing the oil is too thick to escape promptly, and acts as a foreign body. The pustule is thought to be a staphylococcic infection secondary to the foreign body. A small number of authorities take a different atti-

tude toward the sebaceous mechanism and feel that the arrectores pilorum are too weak to express the oil from the ducts. It is explained that acne rarely occurs in the oil ducts of large hairs; although more oil glands are on the scalp than the face. Only the follicles of the fine lanugo hairs are involved. Richard Sutton, Jr., is a strong adherent to the theory that acne is not a disease but a condition caused by faulty fat metabolism.

Stokes and his coworkers have considered acne from a complex etiologic background. They have discussed in great detail thirteen different factors that influence its course and behavior. Hyperactivity of the sebaceous glands is considered a factor of prime importance. Heredity is evidently an outstanding feature. The glandular oily type of skin is most certainly a familial characteristic. The function of the endocrine glands must play a part, since acne is a disease of puberty, and is intensified during menses. Constipation, fatigue, exhaustion, and vitamin deficiency are factors to be considered. The psychoneurogenic element is both an etiologic factor and a therapeutic problem. Many neurotic girls and boys get the "pick and squeeze" mania to such an extent that they keep their faces excoriated and traumatized continuously. Stokes lays much stress upon the importance of the water balance in the skin, stating that acne is aggravated by hydration and is benefited by dehydration. Hydration is enhanced by diets consisting of carbohydrates, fruits, fruit juices, and other foods that have a high alkaline ash. Ovarian and testicular hormones influence hydration and this may have some bearing upon the age incidence. Ovulation and liberation of estrogenic substance promote cutaneous hydration and may account for menstrual flares of eruption. Dehydration is brought about by proteins and other acid producing foods, by dilute hydrochloric acid, and by glucose intravenously. Water starvation and low sodium chloride intake should be an effective method of dehydration. Allergy plays

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

only a minor etiologic role, according to the opinion of most observers. Workers in grease, oils, and tar are prone to have acne. A very high percentage of mechanics and roofing employees have acneform eruptions. Employees exposed to the fumes of chlorine gas may have a similar condition. Iodides and bromides internally may cause acne-like lesions of the face, chest, and shoulders.

Hypothyroidism seems to be an important etiologic factor. Dr. D. C. Smith states that metabolic determinations of more than one hundred cases showed a minus reading in practically one hundred per cent. Investigation by Richard Sutton, Jr., corroborates this experience.

Notwithstanding the many etiologic factors, hyperactivity of the sebaceous glands occupies a prominent position. The majority of the cases have oily greasy faces and oily seborrhea of the scalp. This feature is most noticeable in brunettes with thick skin. Believers in the infectious theory of acne claim that the infection stimulates the secretion of oil.

It is reasonable to assume that infection of the oil glands due to a foreign body reaction is logical and sound. Other factors may influence the course of this condition indirectly by action upon the sebaceous glands and by effect upon the patient's resistance to infection. Climate, food, hygienic surroundings, economic responsibility, physical activity, general physical condition, endocrine imbalance, and psychogenic instability have a bearing upon the sebaceous activity and upon the resistance to infection.

Treatment of acne requires a very thorough study of the physical condition of the patient and a careful painstaking history to determine the many factors that may play a part in the etiology of each individual case. Every case should be considered from different standpoints. Many cases can be prevented by the proper instruction to mothers as to the care of the children. Such advice will be very helpful to families with an acne hereditary background. Dr. Andrew Glaze has done a great deal of investigation with preventive measures that offer a brilliant ray of hope in this direction. Since sebaceous activity is such an important part of the process, steps should be taken to

minimize the secretion of oil. The large pores of the skin in acne individuals is the result of dilatation of the sebaceous ducts by excessive sebaceous secretion of firm consistency. It is Glaze's opinion that children between the ages of seven and eleven should have a rigid dietary regime, restricting the amount of fats and carbohydrates. The skin should be kept meticulously clean and only a modicum of cream should be allowed since it has a tendency to close the glandular outlets and helps to develop blackheads.

When acne has advanced to full maturity the individual should receive careful instructions as to the general care of the skin and should be informed regarding the diet. The skin should be cleansed with soap and water morning and night. Cream should be absolutely prohibited. Powder and rouge in small quantities are permissible. Applications of astringent lotions, such as *lotio alba*, or other sulphur preparations are recommended by most therapists. Ointments of sulphur and salicylic acid are good remedies in acne when the prevailing lesions are comedones. The scalp should be shampooed every three to four days if excessively oily. Becker recommends that the soap be immediately removed, after thoroughly lathering the scalp. The scalp should then be relathered and the soap allowed to remain from five to thirty minutes depending upon the amount of oil. If a large amount of oil is present, the soap should remain twenty-five to thirty minutes before removal. A local antiseptic and a vigorous massage are also beneficial.

The removal of comedones by gentle expression with a special instrument devised for this purpose is very helpful in preventing abscesses. Intelligent patients may be permitted to carry out this procedure after proper instructions. Every case should be warned against the pernicious habit of "picking and squeezing" that so frequently happens. Not only does this practice scar the skin, but it may spread the infection by traumatizing the skin and by contamination. Many individuals have to be divorced from the influence of the atrocious cosmetician, and sometimes it is necessary to insist upon the patient to ignore the whims of an overzealous mother who has social ambitions.



Many general measures can be adopted according to individual indications. Overworked students should have more rest. Eruptive flares are stimulated by school examinations, by social excesses, and by late hours. Anemic thin people should be treated according to general indications. Liver extract and other tonics have been found to alleviate acne in this type of person. Endocrine imbalance should be corrected whenever possible. It is very likely that some of the effect of endocrine preparation may be due to nonspecific action. Constipation may be corrected by measures that are familiar to most practitioners. The diet should be rigidly enforced. Carbohydrates stimulate sebaceous gland activity and are factors in hydration. Oily foods, such as pork, pork products, salad dressings, pastries, sweet milk, butter, chocolate, and other vegetable oils should be either completely eliminated or should be eaten as little as safety of health will permit. Excessive amounts of cod-liver oil seem to be detrimental to the relief of acne.

Striking benefits can be obtained from thyroid extract in selected cases. Richard Sutton advocates whole thyroid substance in every case, stating that the dose should be increased until the symptoms of hyperthyroidism are produced in order to determine the tolerance. When the dosage is established the patient is kept on a subtolerance level. He also emphasizes the importance of a low fat diet and gives the thyroid to help metabolize the fat. He says that acne will progress conspicuously with the daily consumption of a quart of sweet milk. He permits buttermilk and skimmed milk. Sutton is more liberal in sugar diets than the average observer. His ideas of therapy are radical but are probably worthy of consideration. Thyroid therapy is certainly a valuable remedy in definite hypothyroid cases. Iodized salt is thought to be detrimental to the progress of acne. This is very likely due to the inhibitory action upon the thyroid rather than to the effect of the iodine directly. Much work has been done with the use of vitamins. Vitamin B seems to be the most efficacious. It prevents aclorhydia and relieves constipation in addition to its other merits. Vitamins A and

D have been helpful when used in large doses. However, Stokes warns against indiscriminate use of large doses. Large pustular lesions seem to be helped by autogenous vaccines, but the benefit is very doubtful in the ordinary case.

In the hands of conservative operators X-ray therapy is a very worth-while therapeutic measure. The results seem to be brought about through two avenues. Most skin infections are benefited by X-ray therapy and the secretion of oil is checked by the atrophic effect of radiation upon the oil glands. It is a measure that should be used with great caution. On the one hand, it is a most valuable single agent, but on the other, it is a very dangerous procedure. Unsightly, disfiguring radiation sequelae are very discouraging object lessons. Radiation should be given in small doses at intervals of one or two weeks. Great care is taken not to give a large dose at any one time or to give an excess of aggregate doses. An erythema of the skin should never be produced. Boys and girls younger than eighteen years should be treated with much precision and with a limited amount of total therapy. Blonds do not withstand radiation so well as brunettes. Thin translucent skins are more sensitive than thick oily integuments. Pocklike scars are not the result of X-rays, but are the sequel of pustules. Atrophy, wrinkling, and telangiectasis may result from too much therapy at any age and may be caused by a small amount of treatment in young children. The hair, eyes, and anterior portion of the neck should be protected from the exposure to X-rays at all times.

Ultraviolet light has only a limited therapeutic value in acne, but it is advocated in doses large enough to produce vesiculation for acne scarring.

In conclusion a few essential points should be re-emphasized. Acne is a prevalent commonplace dermatosis, requiring diligent pursuit of the various etiologic factors, before relief can be attained with any degree of success. Much benefit can be obtained from the use of tonics, thyroid extract, and gonadotropic substance. Unfortunately, most of these measures give only temporary benefits. A quotation from Stokes is ap-



propriate: "The more thorough the attention given to the elements of this complex etiologic background, the more successful will be the local therapy with roentgen rays and other agents. Without such attention the most thorough regimen of local treatment, including especially roentgen irradiation, is apt to be only temporarily effective. As a result, overuse and repetition of the irradiation in the attempt to clear the difficult lesions or deal with relapse bring on atrophy and other effects of overdosage." X-radiation is the most universally beneficial therapeutic agent in the hands of the dermatologist, but it should be employed with great care and by an ever-watchful conscientious technician.

#### DISCUSSION

DR. ROBERT L. PATTERSON (Chattanooga): I think that Doctors King and Hamilton certainly deserve a lot of commendation for this excellent paper. Doctor Hamilton has covered the field so adequately that there is very little to be added to it. There are a few things that I think could be re-emphasized with benefit.

Considering the incidence of acne, which Doctor Hamilton has told us was fifty per cent between the ages of twelve and twenty-five or twenty-six, we realize that it is a very common thing, and considering the sequelae that we see the patient carries throughout his life, it is only too evident that many cases are neglected that should be treated.

I should like also to emphasize the absolute necessity of treating and controlling seborrhea in the treatment of acne. Many times seborrhea renders acne almost intractable. I don't want to give the impression in any way that seborrhea is a cause of acne; it is not, but it certainly renders it more acute.

I wish also to say that in Doctor Hamilton's paper he called attention to the fact that ovulation and the liberation of estrogenic substances produces

hydration in the skin, and due to the production of hydration, according to Stokes' theory of water balance in the skin, this should cause an acute flare-up of the acne. I say that with malice aforethought because I feel undoubtedly that estrogenic substances are not only used too much, but abused in the treatment of acne. I think that estrogenic substances do produce hydration, but I don't think that is the only thing they do. Unfortunately for the doctor and the patient, estrogenic substances appear to improve the acne temporarily. However, in nearly all cases, if followed over a period of time, I believe that the acne is more apt to return, and when it does return it is more intractable and doesn't respond to treatment nearly as well as though estrogenic substances had not been given. In addition to that factor, we also have to face the problem of upsetting completely the endocrine balance in a young adolescent individual. This sometimes has far-reaching effects and should be considered adequately.

As far as other things in the treatment of acne are concerned, I should like to say that the indiscriminate use of iodized salt, also the indiscriminate use of sedatives and cathartics, should be borne in mind in taking a history in every acne case. Many times we find cases of bromides being used excessively as well as phenolphthalein.

Cosmetics play their part in the aggravation of acne, not in the causation.

As Doctor Hamilton said, very little allergy is involved in acne, but the cosmetics, purely by mechanical occlusion of the hair follicles, do aggravate the condition; particularly is that true in the case of pancake make-up.

I want to re-emphasize a point that Doctor Hamilton made about X-ray. I believe, and I think that we all agree, that X-ray is the one most useful means of treatment of acne, and outside of a few definite contraindications, X-ray is the method of choice. However, X-ray is a two-edged sword and it should be treated as such; it should be administered by someone adequately trained in the use of X-ray, and I should like also to say that X-ray in young individuals under the age of sixteen to eighteen, as Doctor Hamilton pointed out, is possibly a risky if not contraindicated procedure.

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### AN EXPRESSION OF APPRECIATION

It is a bit unusual these days for the medical profession to receive a word of commendation and appreciation. It is with a great deal of pleasure, therefore, that the following letter is reproduced on the editorial page of the JOURNAL with the permission of the author.

We doctors are aware that we of necessity must perform many difficult and disagreeable tasks in connection with this gigantic task of military preparedness.

On behalf of the profession of Tennessee this letter has been acknowledged with expressions of appreciation.

It is as follows:

"July 10, 1941.

"Dr. H. H. Shoulders

"Secretary, Tennessee State Medical Association

"508 Doctors Building

"Nashville, Tennessee

"Dear Doctor Shoulders:

"For over nine months the work of selecting men for the armed forces has proceeded in an eminently satisfactory manner. This has been accomplished by the unstinted sacrifice of local Selective Service organizations who have labored long hours without remuneration.

"The Selective Service System of Tennessee is fully aware of the tremendous contributions that physicians of Tennessee have made to this program. Six hundred twenty-five local examining physicians and Medical Advisory Board members have examined over 50,000 registrants, 14,000 of whom are now in the armed forces. That only eight per cent of those that were sent to induction stations were rejected for physical reasons (one of the lowest rates in the country) tells how earnestly these physicians have labored. Tennessee physicians in this time of crisis, as always in the past, have come forward willingly to do their part and more. It is my conviction that future events will bring them increasing satisfaction in the knowledge that they served their country well in this hour of need.

"May I, through you, commend the doctors of Tennessee for their splendid work and beg of them the continuance of their full measure of devotion to our common cause—the preservation of liberty.

Sincerely yours,

"T. A. FRAZIER, *Brigadier General,*

*"State Director."*

### FURTHER REVELATIONS FROM THE ADMINISTRATION OF THE SELECTIVE SERVICE ACT

The National Society for the Prevention of Blindness, Inc., of 1790 Broadway, New York City, has issued a press release containing statements made by Dr. Arno Town with reference to the importance of eye defects as a cause for rejecting men for military service. Among other things, he is quoted as saying:

"More than five per cent of the men examined for military service in New York



City under the Selective Service Act are being rejected because of defective vision as a primary cause, but approximately eleven per cent have eye defects sufficient to disqualify them for military service.

"The most common cause of eye defects discovered by the Selective Service examinations are myopia and myopic astigmatism."

This statement, unlike many statements that have been given out, represents a constructive analysis of the situation. It is a plain statement of facts. It is not used as propaganda to support an indictment of the medical profession.

As facts are brought out they constitute far more of an indictment of the public health phases of medical care. For example, school children are supposed to have been examined by school health authorities, and this has been true during the period these draftees were school children.

Evidently these school health authorities have failed to accomplish the purposes they were created to accomplish. Such figures as are presented have been the basis for the creation and public support of school health examiners.

There is no more difficult task today than that of puncturing propaganda balloons; at the same time the task is most important. It is becoming increasingly apparent that the people can be propagandized into the creation of bureaus on bureaus, agencies on agencies, until all the substance and earnings of the people are consumed by them and yet not accomplish the purpose of their creation. Each failure calls for more funds. The failure seems never to be a basis for the abandonment of any project.

#### BLOOD PLASMA BANKS

The value of blood plasma in saving life has been demonstrated. Much of the experimental work necessary to determine the most practical methods of preparing and preserving plasma for use has been done.

The next problem is that of working out a logical plan by which blood may be obtained and the plasma prepared and stored

in such a way as to make it readily available to all who need it when they need it.

It is reported that approximately 1,500 pints of plasma in saline were shipped to England up to February 1, 1941.

It is stated that the people in England are now prepared to supply their own needs with blood and plasma without aid from the United States.

The Surgeon Generals of our own Army and Navy have requested the American Red Cross to sponsor the creation of a national reservoir of blood plasma to be used by the Army and Navy, as well as the civilian population in case of a disaster.

The American Red Cross has accepted the responsibility and is making preparations to establish such a reservoir and make plans for the effective distribution of plasma.

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#### THE NATIONAL PHYSICIANS COMMITTEE

Questions are still raised now and then as to the reason for the National Physicians Committee and as to whether or not the activities of the committee are meritorious.

The committee held a meeting in Cleveland, Ohio, during the week the American Medical Association was in session. It was a dinner meeting. A large number of doctors attended from every state in the Union. A number of interesting speeches were made.

It was pointed out that publicity carries power to mold public opinion. It was pointed out also that nearly every agency of the federal government has a publicity department. It was pointed out that there are new techniques at the present time to be employed in the use of publicity. It was pointed out that a medical organization such as the American Medical Association is not thoroughly suited to such activities.

The American Medical Association performs many functions. In fact, a majority of its functions have nothing to do with molding public opinion with regard to the issues which confront medicine.

This committee is composed of outstanding men worthy of the confidence of the profession. They are charged with the duty

of forming the policies of the committee and of directing its activities.

Mr. John M. Pratt is the executive administrator. He is a man of long experience in publicity work.

The committee is depending upon voluntary contributions for its support. It is worthy of the support of the doctors of the United States.

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#### THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

The National Foundation for Infantile Paralysis is prepared to make free distribution of Toronto splints and Bradford frames for use in the treatment of indigent patients regardless of age.

According to our information, these splints and this frame are to be used in the acute stages of the disease to prevent the deformities which so often arise and require correction later.

In the event an epidemic arises in any locality, it would be appropriate for the attending doctor to communicate with the National Foundation for Infantile Paralysis, 120 Broadway, New York City, with a view to obtaining this service for his patients.

This appears to be an appropriate activity aimed at the reduction of the amount of the deformity and disability a patient may have following an acute attack of infantile paralysis.

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#### PROGRESS IN THE COMBINATION OF LOCAL SOCIETIES INTO LARGER UNITS

The House of Delegates of the Tennessee State Medical Association took action in April to encourage small county societies throughout the state to negotiate with other smaller societies in the same area with a view to their combining into larger and more efficient units.

From news which comes to the office from day to day satisfactory progress is being made. In the main, activities are as yet in what may be called "the discussion stage." It is perfectly proper that the matter be thoroughly discussed before final action is taken.

It is obvious also that the extent of combinations in various localities must be governed largely by the number of doctors in the area and by the road facilities.

Action was taken at Springfield, Tennessee, some nights ago by the Robertson County Society to invite the members of adjacent county societies to meet with them for the purpose of discussing the subject thoroughly.

It is hoped that all the societies throughout the state will have the quality of leadership necessary to take the matter up and bring together the doctors of an area suitable for combination with a view to effecting their union into one local society.

The councilor of each councilor district should be appraised of these actions, and if possible should participate in these discussions. Most of them were present when the subject was discussed in the House of Delegates.

It might be worth while to point out the fact that a number of such combinations are already in existence and functioning in a satisfactory manner to all the doctors who are affected by the combination.

In West Tennessee Madison was joined by Chester, Henderson, and Decatur Counties to form a society with fifty-two members.

Another example is in East Tennessee, where Washington, Carter, and Unicoi Counties combined to form a society of fifty-nine members. They have put on scientific programs pleasing to any society.

The Five-County Society is composed of Hardin, Lawrence, Lewis, Perry, and Wayne Counties in Middle Tennessee. Some of these counties were never organized until the combination was effected. Most of these counties are sparsely settled. A relatively small number of doctors reside in each county.

Sullivan-Johnson County Society is another example with a membership of forty-one doctors.

The Dyer, Lake, and Crockett Counties Society has a membership of thirty-five doctors.

There is not a single instance in which

the doctors would break up the combination if permitted to do so.

In some instances it has been necessary to split a county. That is, the county is not organized—has no charter. By reason of road conditions some of the physicians joined a society on the east and others joined a society on the west.

Such a step will have many advantages. It will bring doctors in the state into a more compact and efficient unit. Local societies are in position to produce their own scientific programs, or, if they so desire, to secure the best programs from larger medical centers.

The disadvantages of travel to attend a meeting is offset by the advantages of a thoroughly worth-while meeting.

The postgraduate work is being carried on and is expected to continue and be greatly facilitated.

Such a step will accomplish the purpose of organizing completely every county in the state. It will bring the doctors in these more remote areas into intimate touch with their fellows.

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#### RESOLUTION REQUESTING ESTABLISHMENT OF PROCUREMENT AND ASSIGN- MENT AGENCY

The following resolution was presented to the House of Delegates of the American Medical Association by the Committee on Military Preparedness and adopted.

It is reproduced here as a matter of information to the membership.

It is becoming increasingly apparent that some such agency as the one proposed should be created and clothed with authority to deal with the problems arising in connection with medical military preparedness.

It is sincerely hoped that this resolution will receive prompt attention by the authorities in Washington.

The resolution is as follows:

"Whereas, the President of the United States has declared that we are in a state of unlimited national emergency, and the Surgeon General of the United States Army requested the American Medical Association

in June, 1940, at the annual session to aid in the procurement of the necessary personnel for an army of 1,500,000 men; and

"Whereas, the American Medical Association established a Committee on Medical Preparedness which has now on hand the records of approximately 150,000 physicians as well as a statement as to their training, experience, and specialization; and

"Whereas, the sudden entrance of the United States into a war might immediately require the services, not only of the physicians already called to duty, but of a very considerable additional number; and

"Whereas, neither the American Medical Association nor any other civilian agency has the responsibility or the authority for the selection of those physicians who would be necessary for immediate duty and who would be called from civilian practice into service with the military agencies.

"Therefore Be It Resolved, That the United States government be urged to plan and arrange immediately for the establishment of a central authority with representatives of the civilian medical profession to be known as the Procurement and Assignment Agency for physicians for the Army, Navy, and Public Health Service and for the civilian and industrial needs of the nation."

This recommendation is made to avoid or minimize confusion and the inevitable delay which would result from the lack of such an arrangement. It is further recommended by the Committee on Medical Preparedness that, if this resolution is approved by the House of Delegates, a copy of it be sent to the President of the United States, the Secretary of War, the Secretary of the Navy, the Chairman of the Senate and House Committee on Military Affairs, the Administrator of the Federal Security Agency, the Surgeon General of the United States Army, the Surgeon General of the United States Navy, the Surgeon General of the United States Public Health Service, the Adjutant General of the Army, and the Health and Medical Committees.



# APPOINTMENT OF MEDICAL STUDENTS IN THE MEDICAL ADMINISTRATIVE CORPS RESERVE

The following letter is published on the editorial page for the information of all concerned and at the request of Colonel Clifford Jones, executive, Headquarters First Military Area:

"1. The letter of this office of May 26, 1941 (AG 210.1 Med-Res. 5-1-41 RB-A). Subject: Deferment of medical students is rescinded and this letter is substituted therefor:

"2. Authority is granted to corps area commanders to waive the provisions of paragraph 5, army regulations 140-33, for the appointment in the lowest grade in the Medical Administrative Corps Reserve after July 1, 1941, of physically qualified male citizens who are bona fide matriculants at approved medical schools within the United States and who have successfully completed the first two years of their medical education. Officers so appointed will be transferred to the War Department Reserve Pool and retained therein until eligible for appointment in the Medical Corps Reserve or for action under paragraph 3 (c) below.

"3. (a) Appointment will be made without reference to an examining board as prescribed in paragraph 20 c, AR 140-5, and without reference to the peacetime procurement objective for the Medical Administrative Corps Reserve.

"(b) Applications, accompanied by report of physical examination, will be forwarded by the dean of the medical school to the Commanding General of the Corps Area in which the school is located, together with a certified statement that the applicant has successfully completed the freshman and sophomore years of medical instruction and is an accredited matriculant in the junior or senior class in medicine at the institution. The certificate will state the prospective date of completion of the prescribed four-year course of medical instruction.

"(c) Officers of the Medical Administrative Corps Reserve appointed under the provisions of this letter and transferred to the War Department Reserve Pool will be

discharged from the Officers' Reserve Corps for the convenience of the government under the following circumstances:

"(1) Discontinuance of medical education.

"(2) Matriculation in an unapproved school of medicine.

"(3) Failure to complete successfully the prescribed four-year course of medical instruction.

"(4) Failure to secure appointment in the Medical Corps Reserve within one year of the completion of the prescribed four-year course of medical instruction.

"(d) The Surgeon General will maintain adequate records to assure timely application for appointment in the Medical Corps Reserve and transfer from the War Department Reserve Pool, and to assure discharge as provided above.

"4. Transfer to the Medical Administrative Corps Reserve of reserve officers of other branches who are studying medicine, dentistry, and veterinary medicine as authorized in AG letters dated April 17 and August 28, 1940. Subject: 'Special Mobilization Procedures for Procurement of Medical Department Reserve Officers Who Are Students in Approved Medical Schools' (AG 210.31 ORC 10-24-39 R-A) will continue as now authorized. Such transfer may be effected prior to actual matriculation provided the applicant has been accepted for enrollment by an approved school.

"5. Appropriate publicity will be given the above authority by Corps Area Commanders, Department Commanders, and the Surgeon General. Properly qualified students will be invited to submit application for appointment, final approval in each case to be made by the War Department."

By order of the Secretary of War.

E. A. ADAMS, *Major General.*

*The Adjutant General.*

\*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE  
ARMY AND NAVY

John W. Adams, Jr.-----Nashville  
Edward S. Cardwell, Jr.-----Memphis

\*Based on information published in *Journal of the American Medical Association*.

Everett E. Carrier.....	Fountain City
Reuben B. Chrisman.....	Nashville
William C. Correll.....	Memphis
Charles J. Deere.....	Memphis
Leon Ferber.....	Nashville
Harold L. Gilliland.....	Nashville
Charles H. Housholder.....	Memphis
John Davis Hughes.....	Memphis
R. C. Kimbrough, Jr.....	Madisonville
James A. Loveless.....	Nashville
John O. Marcy.....	Bristol
J. J. McFarland, Jr.....	Lebanon
Joseph H. Patterson.....	Nashville
Marcus J. Stewart.....	Memphis
Otis S. Warr, Jr.....	Memphis

## RELIEVED FROM DUTY

Edward S. Cardwell, Jr.....	Memphis
Charles W. Davis, Jr.....	Humboldt
Marion T. Martin.....	Memphis

## ORDERS REVOKED

Clarence W. Asling.....	Nashville
Rollin A. Daniel, Jr.....	Nashville
J. C. Eldridge.....	Chattanooga
Loyall D. Farragut.....	Jonesboro
Thurman K. Hill.....	Nashville
Harry D. Jones.....	Nashville
Philip L. Lyle.....	Clarksville
Bedford F. Peterson.....	Bolivar
Oscar B. Stegall.....	Memphis
John L. Van Hooser.....	Smithville
Lowell E. Vinsant.....	Knoxville
Thomas S. Weaver.....	Nashville
James Roger Whitley.....	Chattanooga
Leonard D. Wright.....	Memphis

## RESOLUTIONS

## DR. LEON THAYER STEM, SR.

On May 15, 1941, the Chattanooga and Hamilton County Medical Society lost one of its most beloved and distinguished members in the death of Dr. Leon Thayer Stem, Sr.

Doctor Stem was born in Rover, Tennessee, January 13, 1884, and was graduated from the University of Tennessee Medical College in 1909. He came to Chattanooga in 1910 and located in the East Lake area, where he soon acquired a large practice. His practice was interrupted by a period of service in the army during the first World War. Shortly after returning from the army, he moved his office to the downtown

area and devoted his energies to the practice of internal medicine. He was president of the Chattanooga and Hamilton County Medical Society in 1925, and president of the Tennessee State Medical Association in 1929-30. He was a fellow of the American College of Physicians and a past chief of staff of the Baroness Erlanger Hospital and Pine Breeze Tuberculosis Sanatorium.

He was a member of the Presbyterian Church and a Mason and a Shriner.

Failing health forced him to move to Sarasota, Florida, five years ago, where his death occurred.

Doctor Stem was married to Miss Edith Allison of Shelbyville, Tennessee, who survives him as do four sons, L. T. Stem, Jr., of Sarasota, Florida; Dr. W. A. Stem of Chattanooga, who is now a medical officer in the army; Richard Stem of Sarasota, Florida, and James M. Stem, who is a medical student at the University of Tennessee, Memphis.

Doctor Stem had been one of us and until ill-health forced his retirement, he took part in all the varied activities of our local and state medical organizations. He was faithful and loyal to every duty intrusted to him. He possessed a high regard for the ethics of his profession and devoted much time and effort to promoting things that were constructive to organized medicine.

We bow submissively to the divine hand of him that doeth all things well and shall abide firmly in the belief that he has been called from a life of sacrificial service to one of eternal peace and rest.

*Therefore Be It Resolved*, That we have lost a true comrade and counselor.

*Be It Further Resolved*, That we extend to his bereaved family our sincere sympathy.

*Be It Further Resolved*, That a copy of these resolutions be spread on the minutes, a copy be sent to the family of the deceased, and a copy be sent to the Tennessee State Medical Association.

F. B. STAPP, M.D., *Chairman.*

F. B. BOGART, M.D.

S. A. FOWLER, M.D.

J. B. MCGHEE, M.D.

J. E. NELSON, M.D.

M. A. MEACHAM, M.D.

R. M. COLMORE, M.D.

J. A. GENTRY, M.D.

G. VICTOR WILLIAMS, M.D.

Approved this twenty-ninth day of May, 1941.

WILLIAM J. SHERIDAN, *President.*

J. MARSH FRERE, *Secretary.*

#### DR. RAYMOND WALLACE

On May 1, 1941, the medical profession of Chattanooga and surrounding territory was shocked by the sudden death of Dr. Raymond Wallace.

Doctor Wallace was born in Chicago, Illinois, January 30, 1876, and later moved as a small child with his family to Pelican Rapids, Minnesota, where his father, the late James P. Wallace, was connected with the Union Trust Company. Later Mr. Wallace organized the J. P. Wallace State Bank, which he conducted for years.

Doctor Wallace graduated from the Medical Department of the University of Michigan, Ann Arbor, Michigan, in June, 1902. After graduation he took postgraduate work and located in Chattanooga in 1903. Doctor Wallace took an active interest in organized medicine and was a member of the Chattanooga and Hamilton County Medical Society, the Tennessee State Medical Association, the Southern Medical Association, and the American Medical Association.

Soon after coming to Chattanooga in 1903 Doctor Wallace was elected secretary of the Tri-State Medical Association, which was composed of Tennessee, Alabama, and Georgia, and this Tri-State Medical Association was changed to the Southern Medical Association at the old Read House in 1905, and Doctor Wallace thereby became the last secretary of the Tri-State and the first secretary of the Southern Medical Association, this great organization which embraces the seventeen Southern States and is the second largest medical association in the United States.

Soon after coming to Chattanooga Doctor Wallace started a medical journal known as *Southern Medicine* and was its editor and owner, and when the late Dr. H. H. Martin, Savannah, Georgia; Dr. Seale Harris, Montgomery, Alabama (now Birmingham, Alabama); Dr. Jerry Crooke, Jackson, Tennessee; Dr. W. W. Crawford, Hattiesburg, Mississippi; sat up all night at the old Read House in Chattanooga and killed the old Tri-State and organized the Southern Medical Association, Doctor Wallace's medical journal, *Southern Medicine*, became the official organ of the new society as it had been of the old Tri-State. Later the Southern Medical Association established its own journal, known as *The Journal of the Southern Medical Association*, and Doctor Wallace discontinued his journal. Drs. H. H. Martin, Seale Harris, Jerry Crooke, W. W. Crawford, and Raymond Wallace, all five of the members listed above and known as the "Big Five" of the Southern Medical Association, later became president of the Southern Medical Association, except Doctor Wallace, and he could have been, but for some unknown reason refused the honor against the wishes of his many friends.

Later Doctor Wallace took less interest in organized medicine, but continued to do an enormous practice and served on the staff of Erlanger Hospital and was chief of the staff of Erlanger Hospital for one or more years.

Doctor Wallace was well read in literature as well as medicine and was one of the pillars of the local Literary Society known as the Saturday Night Club.

In 1908 Doctor Wallace married Miss Leslie Jefferies of Norfolk, Virginia, and to this union were born two daughters, Mrs. Whitney Colburn, Chattanooga, Tennessee; Mrs. Thomas Kennedy, Jackson, Tennessee; and one son, Dr. James P. Wallace, of the Cleveland Clinic, Cleveland, Ohio. Doctor Wallace is survived by his widow, three children, and three grandchildren, Whitney Colburn, Jr., Lesley Wallace Colburn, and James P. Wallace, Jr.

Doctor Wallace had a brilliant mind, was a skilled surgeon, a good citizen, father, and husband.



He was president of the Board of Directors of the Y. M. C. A., and it was during his presidency that our present Y. M. C. A. building on Georgia Avenue was constructed. On the completion of this building he turned the keys over to the society.

*Therefore Be It Resolved*, That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Raymond Wallace.

*Be It Further Resolved*, That we extend to his bereaved widow and children our sincere sympathy and condolence and that a copy of these resolutions and preamble be spread on the minutes of our Chattanooga and Hamilton County Medical Association and that a copy be sent the family and the TENNESSEE STATE MEDICAL JOURNAL and the *Journal of the Southern Medical Association*.

Respectfully submitted,

F. B. STAPP, M.D., *Chairman*.

F. B. BOGART, M.D.

S. A. FOWLER, M.D.

J. B. MCGHEE, M.D.

J. E. NELSON, M.D.

M. A. MEACHAM, M.D.

R. M. COLMORE, M.D.

J. A. GENTRY, M.D.

G. VICTOR WILLIAMS, M.D.

Read and approved this twenty-ninth day of May, 1941.

WILLIAM J. SHERIDAN, *President*.

J. MARSH FRERE, *Secretary*.

## NEWS NOTES AND COMMENTS

For fifty years Bernarr Macfadden has been a crusader against medicine, prudishness, cigarettes, and other things.

"His greatest disappointment has been his battle against medicine," Alva Johnston says in *The Saturday Evening Post* of June 21, the first of two articles telling of the career of the man who believed himself "the master of the golden secret of the cure of disease."

After half a century of warfare against the medical profession, "to some extent Macfadden has admitted that he was on the wrong track," the article says. "He has

staffs of regular physicians at his physical culture sanitariums."

Macfadden's lifelong batting average for all his crusades would be something like this, according to the *Post* article:

Against prudishness.....	1.000
Against medicine.....	.000
Against corsets.....	.890
Against muscular inactivity..	.333
Against alcohol.....	.250
Against cigarettes.....	.000
Against white bread.....	1.000

The article in the *Post* says that to Macfadden, the crusader, there was only one real disease—overeating—and only one cure—dieting or fasting, plus exercise.

With his profound belief in himself, Macfadden did not hesitate to treat every known disease without fee. "The treatment was fundamentally the same for oily skin, locomotor ataxia, fits, weak eyes, weak mind, creaking knees, heart disease, writer's cramp, telegrapher's wrist, baseball player's glass arm, lover's broken heart, red nose," and others.

### CHANGE OF ADDRESS

Dr. Chas. C. Smeltzer, Knoxville, to 899 Madison Avenue, Sanders Clinic, Memphis.

Dr. Paul H. Milton, Fort Oglethorpe, Georgia, to Lawson General Hospital, Atlanta, Georgia.

Dr. E. S. Cardwell, Memphis, to 1710 Senate Street, Columbia, South Carolina.

### MERIT SYSTEM COUNCIL

It may be of interest to some members of the association to know that announcement will be made shortly of examinations for physicians in the Health Department of the State of West Virginia.

Practically the whole range of public health work is covered by these examinations, and those interested in such positions should write Carl M. Frasure, Supervisor, Box 873, Morgantown, West Virginia.

The Memphis Society of Bronchology and Esophagology gave a dinner at the Memphis Country Club on Wednesday evening, June

25, honoring Dr. W. Likely Simpson, recently elected president of the American Bronchological and Esophological Society, and Dr. Richmond McKinney, who was elected and served as president in 1932.

The Harry C. Phibbs Advertising Company for G. C. Searle and Company, Chicago, announce that workmen had started on building their new laboratories and plant.

The new building will contain all the features which have been proven to be of advantage to builders of pharmaceutical laboratories in the past twenty years.

The Searle Company manufactures ethical products approved by the Council on Pharmacy and Chemistry of the American Medical Association. Their policy is to serve the public by cooperating with the physicians.

The company is to be congratulated upon the progress it is making.

## MEDICAL SOCIETIES

### *Greene County:*

The Greene County Medical Society held its regular meeting on July 1 jointly with the Greene County Bar Association.

A paper was given by Dr. L. E. Dyer, entitled "Contacts with the Law."

(Signed) RAE B. GIBSON, M.D.,  
*Secretary.*

### *Hamilton County:*

On July 3 Dr. C. R. Thomas read a paper on "Pulmonary Embolism in Heart Disease."

August 7 Dr. Robert C. Robertson's subject will be "Principles of Fracture Treatment."

### *Monroe County:*

The Monroe County Medical Society met Tuesday, June 10, at 7:00 P.M. After having refreshments with Dr. and Mrs. R. M. Price, they repaired to the hospital for business.

Dr. R. M. Price read an instructive and interesting paper on "Floating Kidney."

There were nine members present.

### *Shelby County:*

July 1—Case reports:

"Calcinosis," by Dr. C. J. Deere.

"Thrombocytopenic Purpura with Splenectomy and Clinical Recovery," by Dr. H. B. Gotten.

Papers:

"Sarcoma of Vulva with Report of Case," by Dr. J. J. McCaughan. Discussed by Drs. P. C. Schreier and W. T. Black.

"Calcification of Ovaries," by Dr. G. A. Coors. Discussed by Drs. M. W. Searight and W. L. Williamson.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

A New Nitrous Oxide Technique for Dental Surgery in Diabetes Mellitus. Samuel Blaustein. *Anesthesia and Analgesia*, November-December, 1940.

Three groups of patients were studied. First, the diabetic group given their full dose of insulin and diet in the morning before anesthesia; second, a nondiabetic group who took food before anesthesia; and third, the group which was diabetic receiving divided doses of insulin. In the use of general anesthesia it is always better that the stomach be empty. However, insulin given with food restriction will upset the diabetic routine. If the patient has neither food nor insulin, there is danger of hyperglycemia.

The author followed this plan in diabetics. The dose of insulin was divided and thus the blood sugar level could be lowered sufficiently to warrant better results. At the same time no food was permitted so that the stomach would be empty. After completion of surgery the residual dose of insulin was administered, followed by orange juice and food. This ingestion of food equalized carbohydrate metabolism. The author in final analysis believes that nitrous oxide-oxygen is best administered to diabetics as well as to nondiabetics on a fasting stomach, and that the division of the dose of insulin for the diabetic will enable this routine to be followed in such a manner as to avoid any interruption of regular diabetic regimen.

## FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

Relief of Neuritic Pain by Artificial Fever Therapy.  
Abstract in the American Medical Association Journal,  
April 23, 1938.

At the University of Nebraska, Bennett and Cash have been using artificial fever in a large variety of diseases. Up to January 1, 1937, in twenty-six months, they have treated 581 patients, who received more than 2,650 fever treatments. Of these patients, forty have undergone fever therapy in an attempt to obtain relief from severe neuritis, myalgic, or radicular painful states. There were twenty cases of sciatic neuritis, six of brachial neuritis, five of toxic infectious polyneuritis and infective neuronitis, three of herpes zoster, two of lymphocytic meningitis, and four of miscellaneous arthritic states with secondary neuritis or neuralgia. All types of neuritic pain were relieved immediately, but pain recurred in some cases, especially in the secondary neuritides from compressive lesions. This form of heat therapy (from 103 to 105 degrees Fahrenheit) is a distinct advance over all local forms of heat in relieving pain. Fever therapy is not recommended to replace other accepted forms of therapy in neuritis, but only as an aid in the management. It probably hastens convalescence in the severe toxic infectious polyneuritic states. The physiologic mechanism of general fever induction effecting relief of neuritic pain is not well understood. Undoubtedly the enhanced blood flow and peripheral vasodilatation in the inflamed areas increase tissue oxidation and nutrition. Leucocytosis, phagocytosis, and mobilization of immune bodies secondary to induced fever play a part in the absorption of rheumatic deposits, dilution of toxins, and the healing of inflamed nerve tissues. The treatments do not interfere with any other indicated therapy and are practically without danger in experienced hands.

## INTERNAL MEDICINE

By R. B. WOOD, M.D.  
By D. R. THOMAS, M.D.  
Medical Arts Building, Knoxville

Dietary Hypercholesterolemia. Alfred Steiner, M.D., and Beatrice Domanski, B.A. American Journal of Medical Sciences, June, 1941.

To try and determine whether feeding a diet high in cholesterol would influence the blood content, eight patients with chronic arthritis and two with chronic nephritis were selected for study. These were given egg yolk powder in daily amounts of 100 grams in addition to a regular diet of 2,500 calories for periods of six to ten weeks. Weekly estimations of blood cholesterol were made according to the technique of Bloor, Pelkan, and

Allen, and an average increase of 101 milligrams was noted in each patient.

One hundred grams of yolk powder was also given to four dogs for varying periods of four to six weeks and a rise of 155 to 251 milligrams cholesterol was noted.

Autopsy on these animals did not reveal significant arterial changes.

The Comparative Value of Ether and Paraldehyde as Agents for Measurement of the Arm to Lung Circulation Time in Fifty Patients with and Fifty Patients Without Heart Failure. Hugh Hudson Hussey, M.D., and Sol Katz, M.D. American Journal of Medical Science, May, 1941, Vol. 20, No. 5.

The authors conclude that in normal persons the drugs are of equal value, confirming previous reports of others. The measurements of paraldehyde were significantly longer than those of ether in cases of heart failure, and they conclude ether is the agent of choice for the estimation of arm to lung circulation time.

Factors Influencing the Fatality Rate of Pneumonia Treated with Sulfonamide Compounds. Harrison F. Flippin, Leon Schartz, and Jefferson H. Clark. Annals of Internal Medicine, May, 1941.

Though the mortality rate of pneumonia has been markedly reduced by the use of sulfonamide compounds, a certain number still die, and this paper is a discussion of eighty fatalities seen in the treatment of 800 cases. Of this group the mortality rate was ten per cent, being 6.8 per cent in those with negative blood cultures and 32.3 per cent in those with positive. Of this group fifty-four per cent was above the age of forty with a mortality rate of 15.4 per cent, while forty-six per cent was below forty with a rate of 3.5 per cent.

Time: Sixty per cent of patients received treatment within first four days with mortality of 5.6 per cent. Thirty-four per cent received treatment after first four days with mortality rate of eighteen per cent.

Types: The mortality rate in Type I, II, and III was seven, ten, and twenty per cent, respectively.

Bacteremia: This was encountered in twelve per cent, but of the fatal cases forty per cent showed bacteremia.

Associated diseases: Thirty-three per cent had other disease conditions. The cardiac group produced a mortality rate of thirty-one per cent. Eight pregnancy cases survived.

No deaths were ascribed to drug therapy. Significant factors influencing mortality are summarized:

Factors	INCIDENCE PER CENT		
	Total Series	Fatal Series	Mortality Per Cent
Cases -----	800	80	10
Age, 12 to 39-----	45.8	16.3	3.5
Years, over 39-----	54.2	83.7	15.4



## Type of infection:

I and II-----	29.1	22.5	7.7
III -----	17.4	33.8	20
Others -----	53.5	43.7	8.1
Bacteremia -----	12	40	32.3
Day of disease, 1 to 4_	65.3	36.2	5.6
Treatment started,			
over 4 -----	34.7	63.8	18.4
Complications -----	6	8.8	14.6
Associated diseases_	33	70.8	20.1

**OBSTETRICS AND GYNECOLOGY**

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

The Basis of the Histological Diagnosis of Carcinoma with Special Reference to Carcinoma of the Cervix and Similar Lesions. Robert Meyer, M.D., Minneapolis, Minnesota. Surgery, Gynecology, and Obstetrics, with International Abstract of Surgery, July, 1941.

The clinical diagnosis of cervical cancer is often indefinite and demands histological control. Following the stages of the historical development of our knowledge of the subject, one might well begin asking these logical questions: What is the microscopic appearance of the tissue in clinical cancer? What tissue disturbances may be seen which differ from the normal or the benign alterations?

1. Changes occur in the epithelial cells which at first may deviate only slightly from the normal: (a) for abnormally long periods the cells may show evidence of the lack of the normal processes of ripening or maturity; (b) they often change their size and shape; this is particularly evident in the nucleus whose whole structure changes; (c) there is an increase in the nuclear chromatin; and (d) sometime the whole character of the normal cell is changed.

2. The cancer cells continuously reproduce themselves so that the whole normal form of the tissue is lost. Occasionally, even when the cells and their nuclei are not essentially changed, the form of the tumor, as a result of continuous growth, is often sufficient for a diagnosis of malignancy. This is best seen in adenocarcinoma in which, with comparatively little change in the individual cell, there are deviations from the normal gland form and multiple layering of the cells to produce thick masses of epithelium. This may grow to be elevated above the normal surface to produce adenomatous or papillomatous tumors.

3. The tumor cells may directly invade the neighboring tissue and destroy it. They may make their way into vessels, may be transported as emboli, and may settle and develop elsewhere in the body to produce metastases. Cancer shows then: (a) variations from normal in the cells and particularly in their nuclei; (b) changes in the gross form of the tissue; and (c) invasion of other

tissues, of vessels, and the production of metastases. The third characteristic, that of invasion, is the most important from a clinical point of view. It is the most striking and historically the first of the characteristics to be recognized. But the other characteristics appear earlier and must be recognized.

The author presents a number of sections illustrating his discussion, pointing out errors made in the diagnosis of carcinoma. Further he emphasizes the need for several serial sections in questionable cases.

**OPHTHALMOLOGY**

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Paratrachoma. Gyula Lugossy. American Journal of Ophthalmology, June, 1941.

Lindner describes paratrachoma as a conjunctival disease due to infection from the genital tract. The causative agent is a virus which produces inclusion bodies. Lindner found within the inclusion bodies "initial bodies" which in a later stage form the "elementary" bodies, and he also proved the existence of free "initial bodies." In contradistinction to gonorrhea and trachoma Lindner was able to transmit inclusion blennorrhea to a monkey. The Crede prophylaxis does not prevent inclusion blennorrhea of the newborn. After an incubation period of seven to fourteen days, the eyelids begin to swell, and there is purulent discharge from the conjunctiva. The acute state lasts about seven days, and is followed by chronic papillary infiltration of the conjunctiva. The disease does not cause pannus formation and generally heals without scars. It lasts for a few weeks or several months, and treatment has been only symptomatic. Immunity is not produced. Lindner believes that trachoma started as a venereal disease. The differential diagnosis between trachoma and paratrachoma includes the following: (1) in paratrachoma the pathologic changes of the conjunctiva soon improve and the conjunctiva of the lower lid is more affected; (2) in paratrachoma there is no thickening of the upper tarsus; (3) the cornea is not affected in paratrachoma; (4) the course of paratrachoma is benign; (5) paratrachoma is always connected with venereal disease, from which inclusion bodies can be demonstrated in the genital tract.

**PEDIATRICS**

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Paroxysmal Tachycardia and Its Treatment in Young Infants. John P. Hubbard, M.D., Boston. American Journal of Diseases of Children, 61: 687 (April), 1941.

Paroxysmal tachycardia in older children pre-

sents the same clinical picture as is observed in adults. In infants, and especially in the early weeks of life, it is a totally different clinical entity, and may be mistaken for pneumonia or idiopathic hypertrophy of the heart. In the early weeks of life the pulse rate may vary from 110 to 140, is very unstable, and excitement or illness may elevate it to 180 or more. In the adult paroxysmal tachycardia may have a pulse rate of 150 to 200, while the same condition in an infant usually causes a rate of 200 to 300 or more, which rate can be counted only by electrocardiogram.

The tachycardia may occur with or without some other illness. If it continues, congestive failure develops and it is the signs of this failure which usually attract attention. Vomiting is almost always noted; there are depression and prostration; the baby is limp; and has a dusky, grayish color. The heart is beating so rapidly it cannot be counted; the radial pulse is imperceptible; the heart enlarges rapidly and may become dilated. Unless relieved, congestive failure develops. There are severe dyspnea, a very high respiratory rate, sometimes 150 to 160 per minute; the liver becomes engorged and much enlarged; the spleen may become enlarged and the abdomen is distended. There may be some dependent edema; the temperature may rise to 102 or more and leucocytosis develops. Roentgenogram of the chest shows the enlarged heart and pulmonary congestion. The attack may stop spontaneously or progress to a fatal termination.

The abruptness with which improvement occurs when the tachycardia subsides is dramatic. A baby critically ill one day acts and appears perfectly well the next.

The diagnosis of paroxysmal tachycardia in an infant should be made if the clinical picture is kept in mind and the pulse is counted. Auricular flutter may give a similar picture and can be differentiated from tachycardia only by the electrocardiograph.

The author reports treating nine infants for paroxysmal tachycardia, all of whom recovered in from one to two days. Six of these patients were diagnosed within a period of one year, all of them being under one year of age, and eight of them being in the first month of life. He used digifoline hypodermically in the dosage of .05 to .1 gram intramuscularly as indicated until the patient was digitalized, giving as much as .3 gram to one patient, a nine-pound baby, within two days. If there was a tendency for the rapid rate to recur, a maintenance dose of .05 gram per day was given until this tendency disappeared. He cautions against giving larger amounts of digifoline per pound of body weight than have been accepted for adult patients. After digitalization in the cases treated, the cardiac rate and rhythm returned promptly to normal, though in some there was a tendency to recurrences that were mild and of short duration. The author used mecholyl chloride

in some cases, but feels that because of alarming reactions sometimes obtained, it should be used only if other treatment fails.

Histories of nine cases are given with electrocardiograms.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

**Diagnostic Difficulties in Roentgen-ray Examination of Pulmonary Tuberculosis.** C. C. Birkelo and W. L. Brosius. *Radiology*, Vol. 36: No. 1, p. 46, January, 1941.

A series of interesting cases are presented in which a diagnosis of tuberculosis was made based on the X-ray findings and the clinical symptoms. In all of these cases, subsequent cause of the disease showed that the major pathological process was a nontuberculous process.

In all cases there were varying combinations of the cardinal symptoms of tuberculosis; that is, cough, hemoptysis, thoracic pain, loss of weight, night sweats, and fever.

The first case was a female, age six, which showed a miliary-like mottling of the lung fields. She had a temperature of 104, rapid respiration, and moist rales. Subsequent cause and an X-ray at the end of three weeks, which showed clear lung fields, proved conclusively the lesion was a bronchopneumonia.

The second case was a man, age forty-five, who for ten years following pneumonia and empyema had had a cough. For the preceding three weeks, he had had progressive weakness, weight loss, and productive foul sputum. Physical examination showed impaired resonance and fine rales over the upper portion of the right thorax. X-ray examination showed a dense infiltration in the upper half of the right lung. Subsequent clinical cause, together with a bronchoscopic examination and repeated laboratory examinations, showed the condition to be a nontuberculous lung abscess.

All cases cannot be abstracted in detail. Other conditions that were at first erroneously diagnosed as tuberculosis, or in which tuberculosis seemed probable, were bronchiectasis, pulmonary cystic disease, primary cancer of the lungs, metastatic cancer, silicosis, cardiac disease, pulmonary moniliasis, and syphilis of the lung.

### SUMMARY

Cases of pulmonary diseases are presented in which the shadows seen in the roentgenograms of the chest were interpreted as being due to pulmonary tuberculosis. All these cases were eventually proven to be nontuberculous.

A discussion of diagnostic difficulties and methods useful in differential diagnosis is offered.

A roentgenogram of the chest may be diagnostic; there are many cases in which it is only one of the examinations which must be employed in making a diagnosis.



## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
1400 Monroe Avenue, Memphis

Minor Surgical Conditions of the Hand. Michael L. Mason, M.D. *Surgery Clinics of North America*, 21: 181 (February), 1941.

The importance of proper care of apparent minor ailments of the hand is vividly illustrated in the presentation of several case histories of patients either dead or seriously incapacitated, usually because of a failure to observe certain principles essential to obtaining uniformly good results in such conditions. The immediate treatment of an open wound consists of rendering it surgically clean and primary suture within a few hours of the injury. After six to eight hours primary closure should not be attempted. Divided nerves and tendons if recognized may be safely repaired within two to four hours after injury if proper cleansing of the wound is carried out. After this time it is probably better to repair these at a later date, thus avoiding the danger of infections.

Prevention of secondary contamination is accomplished by observing operating room technique when caring for even minor injuries or other conditions of the hand. The use of a wash to prevent entrance of bacteria from the nose and mouth of the surgeon, sterile dressings, drapes, and gloves should be employed for even minor injuries or in incising abscesses. In traumatic wound excision of tissue certain to undergo necrosis is essential to primary healing. It is desirable to preserve as much skin as is possible, especially in hand injuries, and after cleansing the wound with soap and water the wound surfaces are examined and the surgeon observes whether or not there is bleeding from them. If there is question as to viability of tissues, it is usually wise to remove them and cover the defect with a split or a pedicle graft.

Tissues should be handled gently and not crushed with forceps, rough retraction, or blunt dissection. Chemical antiseptics to sterilize a wound are condemned and are thought to devitalize tissues and impair their natural resistance to infection. Careful mechanical washing with soap and water and copious saline irrigation is preferred to antiseptics. Careful hemostasis by gauze pressure, by ligation when needed, or by the application of a pressure dressing, will prevent formation of hematomas which predispose to infection. In the application of ligatures a minimal amount of material should be used, employing small size catgut, silk, cotton, or fine steel wire. Drains are usually unnecessary except where there is an abscess or when bleeding cannot be properly controlled. A wound about which the surgeon has doubts should be left open.

Wounds seen in the first few hours should be closed immediately after proper cleansing by suture

if possible. When a closure cannot be effected, skin grafting is indicated. Rest is essential to the healing of injured tissues. Infections or injuries should be splinted to insure rest.

In dealing with infections the following principles are to be strictly observed:

1. Localization of infection by rest, warm moist packs, and roentgen therapy.
2. Drainage at the proper time by adequate, properly placed incisions.
3. Sterilization of the infected area by the use of Dakin's solution, zinc peroxide if due to micro-aerophilic streptococcus and sulfanilamide in adequate doses.
4. Coverage of raw surfaces with skin grafts at the earliest possible moment.
- 5 Restoration of function.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Clinical Management of Renal Trauma. John G. Cheetham. *Surgery, Gynecology, and Obstetrics*, June, 1941, p. 573.

His deductions are from an extensive review of the literature and personal observation of forty-three cases. He finds that there is a definite trend toward conservatism in the treatment of renal trauma. He finds that eight per cent of renal surgery was done for renal trauma. The incidence of males to females, roughly in the ratio of six to one, the right kidney most often being injured. Injury to kidney in infants is relatively more common due to deficiency in perirenal fat.

He calls attention to pre-existing pathology as a cause of increased incidence of trauma.

The mechanics of rupture of the kidney is described. Injury to the kidney due to instrumental causes is discussed. Surgical injuries, such as injury to the vena cava, diaphragm, pleura, and peritoneum, are mentioned.

The classification of rupture of the kidney is discussed, using that of Gutierrez. The mechanism of repair is explained.

He states that hematuria is present in ninety per cent of all cases of renal trauma.

The rupture must communicate with the excretory apparatus for blood to be present. Pain in the loin is usually complained of. A mass is not present unless the perirenal bleeding is severe. Some lumbar rigidity is the rule.

Shock, if immediate, is indicative of nerve injury. If late, suggests active bleeding.

Abdominal distention is suggestive of intra-peritoneal rupture. This is rare and difficult to differentiate from renal ileus.

Diagnosis involves not only the presence of renal injury, but the extent and location of the trauma. Flat films are of some value and if ex-



tensive perirenal hematuria is present, the findings are those of perinephritic abscess.

The value of both intravenous and retrograde pyelograms are discussed, and their dangers stated. Before surgery is attempted, the integrity of the opposite kidney should be known. The expectant treatment of renal trauma is discussed in detail.

The importance of frequent blood pressure readings, hemoglobin, and red count estimations is discussed at length. The benefits from the administration of the sulfonamide drugs and mandelic acid is mentioned.

Post-traumatic lesions, such as perinephritis, hydronephrosis, periureteritis, and many other late sequelae, are discussed. Late pyelograms are submitted to operation due to late sequelae.

The mortality has been estimated to be between fifteen and twenty per cent. There was no mortality among the author's forty-three cases, thirty-one of which were treated surgically and twelve conservatively. An additional number were submitted to operation due to late sequelae.

The author concludes that renal injury is on the increase due to automobile accidents.

This contribution is an effort to bring this subject up to date, but little new information is set forth. The author's incidence of surgical indications would seem, to the casual observer, to be disproportionate.

## BOOK REVIEW

**The Compleat Pediatrician: Practical, Diagnostic, Therapeutic, and Preventive Pediatrics.** Wilburt C. Davison, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatricist, Duke Hospital. Formerly Acting Head of Department of Pediatrics, The Johns Hopkins University School of Medicine, Acting Pediatrician in Charge, The Johns Hopkins Hospital, and Member of American Board of Pediatrics. Fellow American Academy of Pediatrics and American College of Physicians and Member of American Pediatric Society. Cloth. Price, \$3.75. Third edition. Durham, North Carolina: Duke University Press, 1940.

This little book contains more pediatric information than may be found in any other one volume on the subject. Rarely will one look for information on any pediatric subject without finding it in this work. This is not a textbook, but a compend of encyclopedic scope. Although the first edition was published in 1934, additions to pediatric literature have been so great in recent years and advances so many that in this, the third edition, changes in 10,000 lines of the text were found necessary to bring it abreast of the times. Every pediatrician will want this new edition and no practitioner who treats children should be without it.

—J. M. L.



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 Dr. E. L. Rippy, Nashville (1943)

### COMMITTEE ON FRACTURES

Dr. Duncan Eve, Chairman, Nashville (1944)  
 Dr. J. Paul Johnson, Chattanooga (1942)  
 Dr. Edwin J. Lipscomb, Memphis (1942)  
 Dr. Troy P. Bagwell, Knoxville (1943)

### ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Chairman, Nashville  
 Dr. Jesse C. Hill, Knoxville  
 Dr. W. T. Braun, Jr., Memphis

### OFFICERS OF SECTIONS

Tennessee State Pediatric Society—

President—Dr. Jack Chesney, Knoxville  
 Vice-President—Dr. W. D. Mims, Memphis  
 Secretary—Dr. Gilbert Eblen, Knoxville

Tennessee Academy of Ophthalmology and Otolaryngology—

President—Dr. W. D. Stinson, Memphis  
 Vice-President—Dr. J. W. Wilkes, Columbia  
 Secretary—Dr. S. H. Sanders, Memphis



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# The JOURNAL of the TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

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H. H. SHOULDERS, M.D., Secretary and Editor

W. M. HARDY, M.D., Assistant Secretary-Editor

OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXIV

AUGUST, 1941

No. 8

## PROCEEDINGS OF THE HOUSE OF DELEGATES, ONE HUNDRED EIGHTH ANNUAL SESSION, TENNESSEE STATE MEDICAL ASSOCIATION NOEL HOTEL, NASHVILLE, TENNESSEE APRIL 8, 9, 10, 1941

### TUESDAY AFTERNOON SESSION

The opening session of the House of Delegates at the One Hundred and Eighth Annual Meeting of the Tennessee State Medical Association, held at the Noel Hotel, Nashville, Tennessee, was called to order at 2:10 o'clock, Dr. E. R. Zemp, of Knoxville, Speaker of the House, presiding.

### DELEGATES

Dr. H. B. Everett, of Memphis, called the roll, and the following elected delegates responded:

County	Delegate
Anderson	P. M. Dings, Briceville
Blount	G. D. Lequire, Maryville
Bradley	H. H. Hudson, Cleveland
Carroll	J. Mansfield Bailey, Camden
Davidson	George Carpenter, Nashville
Davidson	O. N. Bryan, Nashville
Davidson	(Alternate) D. W. Smith, Nashville
Davidson	J. J. Ashby, Nashville
Davidson	Sam Fentress, Goodlettsville
Davidson	J. C. Pennington, Nashville
Dickson	(Alternate) W. J. Sugg, Dickson
Dyer, Lake, Crockett	J. D. Brewer, Dyersburg
Giles	J. B. Wright, Lynnville
Greene	L. E. Dyer, Greeneville
Hamilton	B. L. Jacobs, Chattanooga
Hamilton	W. E. Bryan, Chattanooga
Hamilton	(Alternate) E. F. Ebert, Chattanooga
Hamilton	(Alternate) J. Marsh Frere, Chattanooga
Knox	M. S. Roberts, Knoxville
Knox	A. H. Lancaster, Knoxville
Knox	Kyle Copenhaver, Knoxville
Knox	Ralph Monger, Knoxville
Madison	(Alternate) G. W. Brasher, Jackson
Putnam	Fred Terry, Cookeville
Robertson	John S. Freeman, Springfield
Shelby	W. C. Chaney, Memphis
Shelby	Webb B. Key, Memphis
Shelby	E. D. Mitchell, Memphis
Shelby	A. R. Porter, Jr., Memphis
Shelby	(Alternate) D. G. Andrews, Memphis
Smith	R. E. Key, Carthage
Washington-Carter-Unicoi	A. B. Shipley, Elizabethton
Washington-Carter-Unicoi	H. B. Fuqua, Johnson City

THE SPEAKER: Have the names of all the delegates in the room been called? (No response.) The roll call shows a quorum present.

THE SPEAKER: At this time we will appoint the Reference Committees.

The Speaker then announced the appointments as follows:

### COMMITTEES APPOINTED

*The Committee on Credentials*—Dr. Ralph Monger, Knoxville, Chairman; Dr. Sam Fentress, Goodlettsville; Dr. H. B. Everett, Memphis.

*The Committee on Reports of Officers*—Dr. M. S. Roberts, Knoxville, Chairman; Dr. W. C. Chaney, Memphis; Dr. W. H. Avery, Shelbyville.

*The Committee on Reports of Committees*—Dr. J. B. Stanford, Memphis, Chairman; Dr. O. N. Bryan, Nashville; Dr. A. M. Patterson, Chattanooga.

*The Committee on Resolutions*—Dr. J. O. Manier, Nashville, Chairman; Dr. C. G. Andrews, Memphis; Dr. L. E. Dyer, Greeneville.

*The Committee on Amendments to the Constitution and By-Laws*—Dr. E. D. Mitchell, Memphis, Chairman; Dr. T. R. Ray, Shelbyville; Dr. Franklin B. Bogart, Chattanooga.

### ADOPTION OF MINUTES OF PREVIOUS MEETING

Upon motion of Dr. H. B. Everett, seconded by Dr. W. Britt Burns, the minutes of last meeting were adopted as published in the JOURNAL.

A five-minute recess was ordered so that the Nominating Committee could be formed.

After the House was called from recess, the Committee on Credentials reported, "Everybody is in good order."

### NOMINATING COMMITTEE

The Speaker called for the Nominating Committee. Dr. Kyle Copenhaver reported for East Tennessee:



**For East Tennessee**

We nominated Dr. B. L. Jacobs, from Chattanooga; Dr. L. E. Dyer, from Greeneville; and Dr. A. H. Lancaster, from Knoxville.

**For Middle Tennessee**

DR. J. O. MANIER (Nashville): Middle Tennessee nominated Dr. O. N. Bryan, from Nashville; Dr. W. S. Rude, from Ridgeway; and Dr. Joseph Wright, from Lynnville.

**For West Tennessee**

DR. EVERETT: Mr. Speaker, Webb B. Key, of Memphis; J. D. Brewer, of Dyer County; and G. W. Brasher, of Madison County.

**REPORTS OF OFFICERS**

THE SPEAKER: We will now have the reports of officers, Dr. C. M. Hamilton, Treasurer and Chairman of the Board of Trustees.

THE TREASURER (Dr. C. M. Hamilton, Nashville): Mr. Speaker, I wish to present an audit of the books as the report of the Treasurer.

**REPORT OF AUDIT FOR YEAR ENDED  
DECEMBER 31, 1940**

*To the Chairman and Board of Directors, Tennessee State Medical Association,  
Nashville, Tennessee.*

SIRS:

We have audited the cash receipt and disbursement records of the Tennessee State Medical Association for the year ended December 31, 1940. The results of our examination are presented in the comments on audit and on the exhibit and schedules designated as follows:

*Exhibit "A"—Statement of Receipts and Disbursements, Year Ended December 31, 1940.*

Schedule A-1—Cash in Banks at December 31, 1940.

Schedule A-2—Statement of Receipts by Months, Year Ended December 31, 1940.

Schedule A-3—Statement of General Fund, Year Ended December 31, 1940.

Schedule A-4—Investments, December 31, 1940.

**Comments on Audit**

*Cash in Banks, \$2,899.03, was verified by reconciliations of statements as rendered by the banks with the Association's records. All cash receipts appearing in the records were traced into the depositories. In verification of disbursements canceled checks were examined, signatures and endorsements scrutinized and the amounts and payees thereon were compared with the entries on the cash disbursement record.*

*Investments, \$17,502.61, and Cash Available for Investment, \$539.27. The Association had funds invested to the total amount of \$17,502.61 at December 31, 1940. Investments were represented by \$16,471.61 in First Mortgage Real Estate Notes, at cost, and \$1,000.00, par value, Bonds of the Home Owners Loan Corporation, at cost, \$1,031.00. These securities were examined by our representative. On Schedule A-4 the items comprising*

invested funds are listed in detail. For the purposes of record all investments are carried at cost.

Mr. W. L. Whitaker of the First Mortgage Company, Nashville, Tennessee, informed us that the Association had with that company on December 31, 1940, a cash balance of \$539.27 representing principal and interest collected on the mortgage notes not remitted to the Association at December 31, 1940.

**General**

Office furniture and fixtures were insured against loss by fire to the amount of \$500.00. The policy was renewed in the year 1939 for a period of three years. The fidelity bond of \$1,000.00 on the Treasurer, Dr. Charles M. Hamilton, was continued in effect for one year by payment of the premium on April 16, 1940.

The records are maintained on a cash receipt and disbursement basis and we have not attempted to prepare a schedule of assets and liabilities at the close of the year, December 31, 1940. However, items of expense incurred in the year 1940 and unpaid at the end of the year consisted of the following:

Social Security Tax for Last Quarter of 1940 (Payable in January, 1941)-----	\$ 33.18
Professional Service (Unbilled 12-31-40)-----	65.00
Cost of December, 1940, Issue of JOURNAL-----	\$479.50
Membership Cards for Year, 1941-----	24.00
Office Supplies -----	6.85

Total, the invoice for which was not received in time for payment to be made in December, 1940-----	510.35
Dr. H. B. Everett, Committee Meeting Expense -----	14.20

Total ----- \$622.73

During the year 1940, the Association published twelve issues of the JOURNAL and paid for all of them except the December issue, as set out above in the tabulation of expenditures unpaid at December 31, 1940.

Respectfully submitted,

March 31, 1941. OSBORN AND PAGE.

By HILARY H. OSBORN, C. P. A.

**EXHIBIT "A"**

**Statement of Receipts and Disbursements for Year  
Ended December 31, 1940**

RECEIPTS—SCHEDULE A-2	
Dues -----	\$10,611.00
Interest on Investments-----	420.15
Payments on Principal of Investments-----	3,896.45
Advertising -----	5,312.00
Exhibit Space -----	880.00
Subscriptions, Extra Copies of JOURNAL-----	5.00
Cuts -----	153.78
Miscellaneous -----	16.94
Total Receipts -----	\$21,295.32
DISBURSEMENTS—SCHEDULE A-3	
MEDICAL JOURNAL -----	\$ 3,577.00
Convention Expense -----	744.64
Salaries -----	6,598.50
Board of Trustees-----	58.75
Medical Education Committee-----	1,500.00
Investments -----	5,000.00
General Expenses and Disbursements-----	2,592.23
Total Disbursements-----	20,071.12
Excess of Receipts over Disbursements--	\$ 1,224.20
Represented by:	
General Fund Balance, December 31, 1939 -----	\$ 1,674.83
General Fund Balance, December 31, 1940—Schedule A-1 -----	2,899.03
Increase in General Fund Balance, Year Ended December 31, 1940-----	\$ 1,224.20



## SCHEDULE A-2

## Statement of Receipts by Months for Year Ended December 31, 1940

Month	Total	Dues	Interest on Investments	Principal of Investments	Advertising	Exhibit Space	Subscriptions and Extra Copies of Journal	Cuts	Miscellaneous
January	\$ 3,078.33	\$ 2,448.00			\$ 388.33	\$240.00			\$ 2.00
February	3,698.19	3,096.00			397.19	200.00		\$ 5.00	
March	3,601.63	3,138.00			402.63	40.00		15.00	6.00
April	930.33	288.00			441.33	200.00			1.00
May	762.97	342.00			416.03		\$1.00		3.94
June	497.08	48.00			447.08		2.00		
July	402.42	18.00			381.42				3.00
August	511.42	60.00			365.64			85.78	
September	4,735.29	73.00	\$405.15	\$3,896.45	338.19			22.50	
October	513.04	96.00			417.04				
November	504.89	24.00			458.39		2.00	20.50	
December	2,059.73	980.00	15.00		558.73	200.00		5.00	1.00
TOTALS	\$21,295.32	\$10,611.00	\$420.15	\$3,896.45	\$5,312.00	\$880.00	\$5.00	\$153.78	\$16.94

## SCHEDULE A-1

## Cash in Banks December 31, 1940

American National Bank	
Balance per Bank Statement,	
December 31, 1940	\$2,542.54
Deduct—Outstanding Checks:	
No. 208—Ideal Laundry	\$ 2.00
No. 210—N. S. Shofner, M.D.	9.20
No. 211—W. M. Hardy	75.00
No. 212—Miss Willard Batey	62.50
	148.70
Balance per Books, December 31, 1940	\$2,393.84
Third National Bank	
Balance per Bank Statement,	
December 31, 1940	\$505.19
Deduct—Outstanding Checks	0
Balance per Books, December 31, 1940	505.19
Cash Balance in Banks, December 31, 1940—Exhibit "A"	\$2,899.03

## SCHEDULE A-3

## Statement of General Fund for Year Ended December 31, 1940

Balance January 1, 1940	\$ 1,674.83
RECEIPTS	
Dues	\$10,611.00
Interest on Invested Funds	420.15
Payment on Principal of Investments	3,896.45
Advertising	5,312.00
Exhibit Space	880.00
Subscriptions and Extra Copies of JOURNAL	5.00
Cuts	153.78
Miscellaneous	16.94
Total—Exhibit "A"	21,295.32
Total Balance and Receipts	\$22,970.15
DISBURSEMENTS	
MEDICAL JOURNAL:	
Printing	\$ 2,896.00
Extra Copies	330.00
Copyright	22.00
Mailing	299.00
Miscellaneous	30.00
Total—Exhibit "A"	\$ 3,577.00
Convention Expense:	
Badges	\$ 35.36
Hotel	113.43
Reporting Service	434.75
Programs, etc.	114.60
Miscellaneous	46.50
Total—Exhibit "A"	744.64
Salaries:	
Dr. H. H. Shoulders	\$ 2,362.50
Dr. W. M. Hardy	1,800.00
Miss Willard Batey	1,500.00
Mrs. Ethel Harrison	936.00
Total—Exhibit "A"	6,598.50

## Board of Trustees:

Meeting, Board of Trustees	
Exhibit "A"	58.75
Medical Education Committee:	
Postgraduate Instruction—	
Exhibit "A"	1,500.00
Investments:	
Additional Investments—Exhibit "A" and Schedule A-4	5,000.00
General Expenses and Disbursements:	
Postage	\$ 250.00
Office Expense and Supplies	269.94
Rent	513.60
Lights	23.41
Telephone and Telegraph	96.85
Letter Service	30.00
Social Security Tax (Net)	62.24
Towel Service	11.00
Bond Premium—Treasurer	25.00
Rent—Safety Deposit Box	3.33
Reprints, etc.	149.83
Travel	330.21
Cuts	339.25
Medical Directory	15.00
Membership Lists	7.10
Refunds and Miscellaneous	65.47
Legal Services	300.00
Dr. C. M. Hamilton, Honorary, 1940	100.00

Total—Exhibit "A"-----2,592.23

Total Disbursements — Exhibit "A"-----20,071.12

Balance in General Fund, December 31, 1940—Schedule A-1-----\$ 2,899.03

## SCHEDULE A-4

## Investments December 31, 1940

## First Mortgage Real Estate Notes:

Maker	Dated	Due	Amount
J. H. Horn	6-1-32	6-1-40	\$ 1,843.81
General Securities Company	4-1-36	5-1-41	1,200.00
Anna Mary Bransford	7-2-37	10-1-47	2,250.00
A. D. Talley	7-1-36	4-1-41	1,000.00
Louise Shields	9-1-36	10-1-46	450.00
Eliza A. Matthews	4-1-37	5-1-47	1,780.00
D. Roy Thomas	3-1-39	5-1-49	2,998.55
*M. E. Hooper	8-1-40	9-1-55	4,449.25
*W. W. Johnson	11-1-39	12-1-54	500.00

Total-----\$16,471.61

## Bonds:

\$1,000.00 Par H.O.L.C. 3's, May 1, 1952/44-----1,031.00

Total Investments-----\$17,502.61

Cash, Available for Investments, on Deposit with First Mortgage Company-----\$ 539.27

\*Items representing additional purchases of investments during year ended December 31, 1940, in the total amount of \$5,000.00.

NOTE—H.O.L.C. 2½ per cent Bonds, Series August 1, 1949/39, of par value \$3,000.00, called in 1939, were turned in and redeemed in 1940. Interest ceased as of the call date.

### FINANCIAL STATEMENT FOR QUARTER ENDING MARCH 31, 1941

	RECEIPTS			
	Dues	Advertising	Miscellaneous	Total
January -----	\$3,426.00	\$ 394.39	\$250.00	\$4,070.39
February -----	1,944.00	354.77	2.00	2,300.77
March -----	2,538.00	339.15	36.00	2,913.15
TOTAL -----	\$7,908.00	\$1,088.31	\$288.00	\$9,284.31

	DISBURSEMENTS				
	Expense	Medical Education	Miscellaneous	Journal Expense	Check Returned
January -----	\$ 700.08		\$ 263.30	\$ 479.50	
February -----	684.46	\$375.00	1,052.60	346.50	
March -----	726.54		137.33	339.50	\$89.00
TOTAL -----	\$2,111.08	\$375.00	\$1,453.23	\$1,165.50	\$89.00
Balance—January 1, 1941 -----					\$2,899.03
Receipts -----					\$9,284.31
Disbursements -----					5,193.81
Excess of Receipts over Disbursements -----					4,090.50
Balance—March 31, 1941 -----					\$6,989.53

THE SPEAKER: That will be referred to the Committee on Reports of Officers.

Dr. Hamilton read the report of the Chairman of the Board of Trustees.

### THE REPORT OF CHAIRMAN OF BOARD OF TRUSTEES

The Board of Trustees of the Tennessee State Medical Association held two meetings in 1940. The first meeting was in Hotel Patten, Chattanooga, April 11, 1940, and the second was in the headquarters office of the Tennessee State Medical Association, Nashville, September 15, 1940.

Those in attendance April 11, 1940, were: Drs. W. O. Baird, E. R. Zemp, Franklin B. Bogart, H. H. Shoulders, and C. M. Hamilton.

The minutes of the previous meeting were read and approved. Upon motion by Dr. Zemp and seconded by Dr. Bogart, the Board of Trustees agreed to increase the salary of Secretary-Editor Shoulders to \$2,400 per annum. It was also decided to appropriate \$100 for the use of the Committee on Public Policy and Legislation. The appropriation of more funds was authorized for a later date, as a rather costly lobby expenditure was anticipated.

The appointment of the various standing committees was transacted after considerable discussion and deliberation. Dr. Bogart, a member of the Committee on Postgraduate Instruction, delivered a message from the Committee, asking for an increase in personnel from four to five, to conduct the affairs of Postgraduate Instruction in General Medicine. This request was granted. A list of the names of the standing committees can be found in the program.

In attendance at the second meeting at the headquarters office, September 15, 1940, were: Drs. W. O. Baird, J. B. Stanford, Franklin B. Bogart, H. H. Shoulders, and C. M. Hamilton. Dr. E. R. Zemp was absent.

Guests present were: Drs. W. M. Hardy, Assistant Secretary-Editor, W. C. Williams, Commissioner of Health, C. B. Tucker, State Health Department, John M. Lee, Chairman of Board of Health, and Frank Harris, member of Program Committee.

Commissioner of Health Dr. W. C. Williams discussed in much detail a proposed plan for a Pneumonia Control Program for Tennessee to be sponsored by the State Health Department in cooperation with the State Medical Association.

After a thorough discussion the Board of Trustees adopted a resolution favoring the Pneumonia Control Program. As the pneumonia season was approaching, it was decided that time could be saved if the Board of Trustees would act as the Executive Committee of the Pneumonia Control Program for the purpose of formulating the general plan of execution.

Four members of the State Association were appointed from each grand division of the state to act as "Instructor-Consultants," as follows: Drs. F. T. Mitchell, C. H. Sanford, L. C. Sanders, Alfred M. Goltman, West Tennessee; Drs. O. N. Bryan, J. O. Manier, E. L. Turner, W. R. Cate, Middle Tennessee; Drs. R. B. Wood, E. R. Zemp, E. T. Brading, and T. J. Manson, East Tennessee. They were to familiarize themselves with a plan of pneumonia control. Their duties were to visit various assemblies of physicians throughout the state and to deliver lectures on pneumonia, giving the advantages of chemotherapy and to emphasize the importance of early treatment. They were to advise the doctors how the drug could be obtained for indigent and semi-indigent patients. Literature on the diagnosis and treatment of pneumonia was to compose a part of the educational activity.

Drs. H. H. Shoulders, John Lee, W. C. Williams, and C. M. Hamilton were authorized to have someone with experience in Pneumonia Control to meet with the "Instructor-Consultants" at a future date. Dr. Roderick Heffron of the Commonwealth Fund was selected to meet with the Executive Committee and members of the State Health Department for a discussion of the question of policy and execution of the project. At a later date, Dr. Harrison Flippen of the University of Pennsylvania, who had had experience with a Pneumonia Control Program, was invited to meet with the "Instructor-Consultants." The whole question of pneumonia was discussed in great detail. A committee was appointed to compile a bulletin for distribution. While this project is being financed by the State Health Department, questions of policy and execution have been largely in the hands of the Executive Committee. A list of the names of the lecturers and the respective localities is appended to this report. A total of thirty-three lectures were given with an attendance of approximately 800 physicians. The Tennessee State Medical Association has the unusual distinction of partici-

pating in two major state-wide Postgraduate Educational projects simultaneously.

Through March 22, 1941, 626 cases of pneumonia had been treated with drugs furnished by the Health Department. One hundred and forty-two physicians in forty-seven counties and three cities supervised the treatment of these cases.

The Secretary made a report of the activities of the headquarters office. The question was raised in regard to the cost of running colored cuts in the JOURNAL. It was decided that the JOURNAL should pay one-fourth of the cost, provided that it did not amount to more than twenty-five dollars for four cuts. The author is required to defray all additional costs.

In the report, the Secretary-Editor called attention to the accumulation of a substantial bank balance that was partly due to the fact that Home Owner's Loan Bond held by the Association had been recalled. The Treasurer was authorized to invest approximately seven thousand dollars in Federal Baby Bonds. It was later discovered that Baby Bonds can be issued only to individuals and that the Association was not permitted to carry out this transaction. The members of the Board of Trustees were informed of this situation and by return mail authorized the purchase of real estate first mortgage notes. An account of these transactions is included in the audit of the Treasurer. The handlers of the finances of the Association hope the House of Delegates are mindful of the great responsibility of this task in this period of uncertainty. Thus far, the principal has been preserved in toto, but the income from investments has been somewhat curtailed.

Respectfully submitted,  
C. M. HAMILTON, M.D., Chairman.

#### PNEUMONIA CONTROL PROGRAM

<i>Place of Meeting</i>	<i>Instructor-Consultant</i>
Dyersburg-----	Dr. L. C. Sanders
McKenzie-----	Dr. F. T. Mitchell
Jackson-----	Dr. C. H. Sanford
Brownsville-----	Dr. Alfred M. Goltman
Memphis Symposium-----	Drs. Sanders, Mitchell, Sanford, and Goltman
Cleveland-----	Dr. T. J. Manson
Mountain City Medical Society--	Dr. T. J. Manson
(Colored, Chattanooga)	
Dayton-----	Dr. T. J. Manson
Jasper-----	Dr. T. J. Manson
Athens-----	Dr. T. J. Manson
Copperhill-----	Dr. T. J. Manson
Chattanooga-----	Dr. T. J. Manson
Bristol-----	Dr. E. T. Brading
Greeneville-----	Dr. E. T. Brading
Johnson City-----	Dr. E. T. Brading
Morristown-----	Dr. R. B. Wood
Kingston-----	Dr. R. B. Wood
Knoxville-----	Dr. R. B. Wood
R. F. Boyd Medical Society-----	Dr. E. L. Turner
Nashville-----	Dr. O. N. Bryan

Franklin-----	Dr. O. N. Bryan
Winchester-----	Dr. O. N. Bryan
Gallatin-----	Dr. O. N. Bryan
Crossville-----	Dr. W. R. Cate
Dickson-----	Dr. W. R. Cate
Murfreesboro-----	Dr. W. R. Cate
Shelbyville-----	Dr. W. R. Cate
Pulaski-----	Dr. J. O. Manier
Clarksville-----	Dr. J. O. Manier
Waynesboro-----	Dr. J. O. Manier
Fayetteville-----	Dr. E. L. Turner
Livingston-----	Dr. E. L. Turner
Maryville-----	Dr. E. R. Zemp
Nashville Symposium-----	Dr. J. O. Manier
	Dr. E. L. Turner
	Dr. W. R. Cate

Although we had a letter from Dr. Wood stating that an attempt was being made to hold a meeting in Campbell County, we do not know whether or not such a meeting was held.

Report referred to Committee on Reports of Officers.

The Secretary-Editor, Dr. H. H. Shoulders, read his report.

#### REPORT OF THE SECRETARY-EDITOR FOR THE CALENDAR YEAR 1940

*To the House of Delegates of the Tennessee State Medical Association:*

I have the honor to submit herewith a brief report of the activities of the headquarters office for the calendar year 1940:

##### Membership

At the end of 1940 the membership of the Association was 1,663. At the end of 1939 the membership was 1,678.

It may be stated again that this number is about the upper limit of our membership possibilities under existing conditions and, as a matter of fact, it is a very creditable proportion of all the doctors in the state.

##### Combination of Local Societies

At the risk of boring you with repetition I am stating again that one of the most effective steps this Society could take to improve the functioning of local societies throughout the state would be to effect such combinations of local component societies as would create local societies with a membership of not less than twenty-five.

There are ninety-five counties in Tennessee. There are fifty-six local component societies. These component societies consist in the main of doctors in the one county. There are only twenty-six unorganized counties. There is a relatively small number of doctors in these unorganized counties. A majority of the doctors in unorganized counties who are eligible to membership in the State Society are members of adjacent societies.



There are several local societies composed of two or more counties already in existence. We have been able to observe the results which grow out of such combinations. Attention is called to the following:

Dyer, Lake, and Crockett Counties; Hardin, Lawrence, Lewis, Perry, and Wayne Counties; Sullivan-Johnson Counties; Washington, Carter, and Unicoi Counties; Fayette-Hardeman Counties; Chester, Henderson, Decatur, and Madison Counties.

Without exception, when the membership of a local society is increased to twenty-five or more, the scientific programs are improved. They can obtain the best of guest speakers when they want to. The local officers function with alertness. Good will in the profession is promoted. In fact, all the elements which make for a good medical society are created. Bad roads are no longer a barrier in the way of such combinations. Any number of doctors have told me they had rather drive thirty or forty miles to attend a good program than to walk across the street to attend a poor one.

State officers are helpless without instructions from the House of Delegates. Each local society is completely autonomous in determining its membership. We cannot request a man to make application for membership in his local society or an adjacent one when his local society will not elect him to membership. Every local society must be the judge of its membership.

Within the last two weeks a doctor who lives about ninety miles from Nashville wrote me that he wishes to join the Davidson County Society because, as he said, the number of doctors in his county is small, most of them old and they could not have scientific programs, with a small number. Certainly no guest speaker will prepare a paper and go to them to address four or five members. The question was put to me whether he could join the Nashville Academy of Medicine and Davidson County Medical Society. I merely quoted the by-laws in reply and referred the matter to his Councilor. In addition to this, I tried to create his interest in the formation of a society in his vicinity composed of all the adjacent counties and thus bring his energy and enthusiasm to bear on the prospect of maintaining a good organization in his community. For these reasons I am requesting the House at this time to give consideration to actions which might be taken by the House to accomplish these very desirable ends. It seems to me that if the Councilor of each district were instructed to hold a meeting in his district with representatives of the doctors in the various counties a logical combination could be worked out in short order.

If the Councilors had some specific instructions from the House, they could study road maps and figure out logical combinations of counties in the various districts to the end that the state be

organized into about twenty-five fine component societies covering the entire state. Such an act would facilitate every activity the State Association is carrying on. First, it would facilitate postgraduate education of all types. Second, the matter of scientific programs could be improved. Third, the matter of keeping the membership up to the highest level at all times. Fourth, more effective activities in the matter of combating objectionable legislative and social trends.

Please pardon me then for bringing this matter urgently to your attention. I have done so because I believe it to be the most constructive step that could be taken by this House of Delegates at this session looking to an improvement in the organization of the medical profession throughout the state.

### Finances

It will be noted in the report of the Treasurer that the Association had a gross income of \$17,245.09 in the year 1940. Of this amount only \$10,611.00 was derived from dues. All the rest, amounting to \$6,634.09, was earned by activities of the Association itself. This is a creditable showing. It is, in part, a basis for the statement that the membership of the Tennessee State Medical Association receives more in benefits and services for money spent in the form of dues than any organization of similar size of which I have any knowledge.

This result is not an accident. It is due in large measure to the fact that you have had a fine group of men serving as officers. I am referring to all of your officers. They have taken their responsibilities seriously and without exception they have served the Association at a financial sacrifice, but they have done so willingly. The Association has a large number of committees and good committeemen serving on them. They, too, serve at a sacrifice. It is this willingness to sacrifice that makes possible the operation of this Association on the basis that it is operated.

This Association is carrying on a large number of very important activities. The work is characterized by efficiency all along the line. These increases in activity involve an increase in the cost of operation.

### The Journal

You, I hope, are familiar with the publication of the Association. At the headquarters office we are proud of the fact that a number of letters have been received complimenting the appearance and content of the magazine.

### General State of Organization

There is evidence on all sides that a fine spirit prevails throughout the organization. Such a situation cannot be created overnight nor can it be maintained except by the continued interest and effort of a large number of capable men.

It must be apparent that the duties of the headquarters office have multiplied at an enormous rate. The correspondence alone is now voluminous. The amount of material submitted for publication is voluminous. This is as it should be. This is not a wail and complaint. It is a simple statement of fact to give to this House an idea of the work that is done.

Respectfully submitted,

H. H. SHOULDERS, M.D.,

Secretary-Editor.

Report referred to the Committee on Reports of Officers.

**THE SPEAKER:** We will now hear from the Committee on Postgraduate Instruction in Internal Medicine, Dr. J. O. Manier, of Nashville, Chairman.

Dr. J. O. Manier read the report of the Committee on Postgraduate Instruction in Internal Medicine.

#### **REPORT OF COMMITTEE ON POSTGRADUATE INSTRUCTION IN INTERNAL MEDICINE**

Following instruction given the Committee on Postgraduate Instruction by this House of Delegates at its meeting in 1940, the Committee set out to endeavor to arrange for a two-year program in internal medicine similar to those conducted in obstetrics and pediatrics in the past.

The Tennessee State Medical Association, the Department of Health, State of Tennessee; Vanderbilt School of Medicine; and the University of Tennessee School of Medicine all signified their willingness and desire to continue their connections with the movement of postgraduate education, contributing the same amount as in the past. Steps were at once taken to petition the Commonwealth Fund to continue its grant and aid for the new course in internal medicine and on October 18, the Commonwealth Fund notified your Committee of its willingness to continue its aid toward a course in postgraduate instruction in internal medicine.

In the meantime your Committee had met and adopted a tentative outline of instruction covering the ten clinical lectures to be given in each circuit and a copy of this outline is filed with this report.

After rather extensive correspondence with many medical schools and teaching hospitals, etc., your Committee met on December 8 and elected as instructor for the coming course Dr. Robert P. McCombs of Philadelphia, Pennsylvania.

After the preliminary work of organizing had been worked out by Mr. L. W. Kibler, the first teaching circuit was begun on February 24—this being the same circuit in which the course in obstetrics and pediatrics was begun. The enrollment in the course in this circuit has been eighty-six, which compares quite favorably with the enrollment in pediatrics and obstetrics, which was eighty-three for pediatrics and ninety-two for obstetrics.

All reports that have come to your Committee have been highly complimentary of the work and ability of Dr. McCombs and your Committee feels that with the continued support of this course in the future by the profession in Tennessee you can look to the completion of another satisfactory Postgraduate Course.

J. OWSLEY MANIER, M.D., Chairman.

TENNESSEE STATE MEDICAL ASSOCIATION

Postgraduate Medical Instruction

Internal Medicine

(Tentative Outline)

DR. ROBERT P. MCCOMBS, Philadelphia, Pa.

Instructor

January, 1941

#### **Lecture No.**

1. Fundamental Principles of Internal Medicine  
Present-day approach to diagnostic and therapeutic problems, with particular emphasis on the recognition of early alterations in normal physiology by practical, clinical, and laboratory methods, and upon a rational physiological approach to treatment.
2. Disorders of the Heart  
Recognition and significance of important cardiac irregularities and murmurs; diagnostic and prognostic criteria of the various common types of heart disease and heart failure, and their differentiation from functional conditions; the diagnosis and management of angina pectoris and coronary thrombosis.
3. (a) Cardiovascular-Renal Disease  
Classification of medical diseases of the kidneys; arteriosclerosis; hypertension in its various forms and its relationship to cardiorenal disease.  
(b) The Management of Heart Failure and Renal Failure
4. Nutritional Diseases  
Dietary and vitamin deficiency states; the value and common-sense use of vitamins and diet in treatment in the light of present-day knowledge.
5. The Anemias and Blood Dyscrasias  
Practical classification of common types: Their recognition, differential diagnosis and treatment; distinction between hyperchromic and hypochromic anemias, with a brief discussion of hemolytic anemias, purpura, polycythemia and leukemia as seen in general practice.
6. Diabetes Mellitus  
Its symptoms, diagnosis, and management; the incidence and treatment of its complications. This subject is discussed primarily from the general practitioner's point of view.
7. Chronic Nontuberculous Pulmonary Diseases  
The recognition and management of chronic bronchitis, emphysema, bronchiectasis, lung abscess, bronchial asthma and cancer of the



fapyridine and Sulfathiazole in the Practice of Medicine

A clear-cut discussion of when and how to use these drugs in streptococcal, gonococcal, meningococcal, and pneumococcal infections, including a discussion on pneumonia. Their value in other infections; the contraindications and dangers.

9. Gastrointestinal Diseases

The clinical recognition and management of gastric and duodenal ulcers, cancer of the stomach and bowel.

10. Gastrointestinal Diseases

(a) Consideration of functional gastrointestinal disorders, their management and differentiation from organic disease. Ulcerative and amebic colitis are discussed together with tuberculosis of the bowel and diverticulitis.

(b) A brief discussion of biliary tract disease.

11. Chronic Arthritis

Classification of the different clinical types, their etiology in so far as is known and a sound evaluation of their management.

The report was referred to the Reference Committee on Reports of Committees.

THE SPEAKER: I will ask Dr. Manier to introduce Dr. McCombs to the House at this time.

**DR. McCOMBS INTRODUCED**

DR. MANIER: Mr. Speaker and Members of the House of Delegates: It is with a great deal of pleasure that I present to this body, to speak to you just a few moments in order that he may come to know you in this way and that you may come to know him, the man whom we have selected to conduct this course in internal medicine. Personally, I think you are going to find that Dr. McCombs is doing and will do just as splendid a job as his two predecessors, Dr. Whitaker and Dr. Thompson, have done. I take pleasure in presenting Dr. Robert McCombs, of Philadelphia.

DR. ROBERT McCOMBS: Gentlemen, I am delighted to have this opportunity to meet you all together as a group. I have had the privilege and pleasure of meeting some of you as individuals in your medical societies where I am giving the lectures in West Tennessee, and I certainly know that I will get to know all of you better individually before the completion of this course.

I want to take this opportunity of bringing to your attention the fine work of this Committee. I have never seen a group of men who have cooperated together, with me, and with other members who are not on the Committee, in such a way as to get this course off to a fine start. I have enjoyed the association tremendously, and I look forward to meeting you all soon. I thank you.

following the adjournment of the House.

**REPORTS OF STANDING COMMITTEES**

**REPORT OF COMMITTEE ON SCIENTIFIC WORK**

Committee on Scientific Work submitted, through its Chairman, Dr. H. H. Shoulders, a copy of the program as its report. Report not referred to a Reference Committee.

**REPORT OF STATE TUBERCULOSIS COMMITTEE**

Dr. W. S. Rude, Chairman, made the following report: "Nothing of importance to report."

**REPORT OF HOSPITAL COMMITTEE**

Dr. E. G. Wood, Knoxville, Chairman, reported for the Hospital Committee as follows:

Although there has been no meeting of the Hospital Committee during the past year, nor has there been any further discussion with the State Hospital Association Committee "re" Non-Profit Hospital organizations, it is with interest that we note that a greater percentage of the hospital facilities of the United States were occupied during 1940 than for any other year for which records are available. The proportion of general hospital beds in use has risen from 69.2 per cent to 70.3 per cent. This is in contrast with a percentage in 1933 of only 59.9 per cent. Where is the saturation point? A general hospital for many reasons cannot have their beds one hundred per cent occupied, and large hospitals can usually maintain a higher rate of occupancy than small hospitals.

Best qualified advice places the optional rate at seventy-five per cent to eighty-five per cent. Each hospital in each community is an individual case. Hospitals should only be built where there are people to be served and where both professional talent and means of support are available.

Also it is of interest to note from statistics gathered that there has been a steady rise in hospital costs since the war of 1914-1918. This can possibly be best explained by the great advances in medicine and hospital administration. For instance, a report from the Bridgeport, Connecticut, Hospital shows that the annual cost per patient by years has increased until in 1940 it was \$54.88 or more than twice as much as in 1913.

I would call your attention to the twentieth annual census of hospitals as printed in March 15, 1941, edition of American Medical Association Journal. This year, for the first time, the questionnaires used by the Council on Medical Education and Hospitals represent a combination of the annual census blank of the American Medical Association and the annual questionnaire of the American College of Surgeons. Cooperation of the college and the council was effected to reduce work of filling out questionnaires in the office of



hospitals. It also facilitates the gathering of essential data required by the two cooperating organizations for their use and for the nation. The officials of the American Medical Association and the college, and their office staffs, worked together to design a questionnaire that would elicit more information with fewer questions and achieve greater uniformity and simplification in the use of terms. However, it should be understood that each organization has its own distinctive separate administration, requirements, inspections, and approved lists. Registration of hospitals means the inclusion of the hospital in the published hospital number of the Journal and Directory, while approval means specific endorsement for educational purposes, that is for training interns and residents.

DR. E. G. WOOD, Chairman, Knoxville.

DR. E. H. Baird, Dyersburg.

DR. L. E. COOLIDGE, Greeneville.

DR. R. R. BROWN, Nashville.

DR. J. H. FRANCIS, Memphis.

DR. JOHN B. STEELE, Chattanooga.

The report was referred to the Reference Committee on Reports of Committees.

Report of the Committee on Public Policy and Legislation was read by Dr. N. S. Shofner, Chairman.

#### REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

The House of Delegates at the 1940 meeting in Chattanooga instructed the Committee on Public Policy and Legislation to make the passage of the Basic Science Bill the major legislative objective for the ensuing year.

Your Committee accepted these instructions and wishes herewith to report the activities of the Committee during the past year.

The first meeting of the Committee was held at the Association headquarters in Nashville on July 14, 1940.

The following members were present:

Drs. M. S. Roberts, Knoxville; H. B. Everett, Memphis; L. W. Edwards, H. H. Shoulders, and N. S. Shofner, Nashville. Drs. R. B. Wood, Knoxville, and F. B. Bogart, Chattanooga, were in Nashville on other business and were invited to meet with the Committee.

The plan of campaign was carefully discussed and four decisions were reached:

1. To publish the proposed bill in the JOURNAL together with a discussion of its provisions in the form of a catechism and to have reprints of this material available.

2. To request each county society to consider the measure at a meeting and act upon it and furnish the headquarters office with a statement of the action taken.

3. To try to consult with the Governor and Mr.

The members of the Committee located in Nash-

ville were instructed to see the Governor and Dr. H. B. Everett of Memphis was assigned the task of arranging for an interview with Mr. Crump on behalf of the Committee.

4. A resolution was adopted empowering Drs. N. S. Shofner, L. W. Edwards, and H. H. Shoulders, of Nashville, to employ a local person whose duty it would be to cooperate with the Committee in securing the passage of the bill by the legislature.

A motion by Dr. Everett, seconded by Dr. Roberts, was carried to the effect that the President, Secretary-Editor, and Chairman of this Committee be authorized to prepare the catechism and that this, with the bill, be published in the JOURNAL at an early date. The idea was that when the members of the local societies are informed they are in a position to approach candidates for the Senate and House with a view to obtaining their support of the measure in advance of their coming to the assembly.

In accordance with the above resolution the Basic Science Bill and a discussion in catechism form were published in the August issue of the JOURNAL. Reprints of these were enclosed in a letter to the president and secretary of each county society. These letters and reprints were sent on July 30, 1940. The letter pointed out the importance of this bill and urged that each society consider and discuss the bill and appoint a Committee to cooperate with the Legislative Committee in passage of the bill. It was pointed out that the Committee was helpless in passing the bill unless Senators and Representatives had been informed of their home people's views before they reached Nashville.

The headquarters office received relatively few replies to this letter but learned later that many societies had approved the bill and had appointed Committees although some Legislators stated upon arrival in Nashville that they had had no discussion of the matter with their doctors at home.

Pursuant to instructions of the whole Committee, the Nashville members, Drs. Edwards, Shoulders, and Shofner, employed Mr. J. D. Mosby, an attorney of Nashville, to assist in passage of the bill. This was done upon advice of Mr. Charles Cornelius, who has been the Association's counsel for some years.

Countless meetings were held between the Nashville members and Attorneys Cornelius and Mosby, and a few minor changes were made in the bill as originally written. Some of these changes were made at the suggestion of the State Board of Medical Examiners and others at the suggestion of the Department of Public Health, with whose head, Dr. Carter Williams, we consulted several times and who was most helpful and cooperative.

A special effort was made to make sure that the Board of Examiners under the Basic Science Act should be impartial and not have either the

power or the inclination to discriminate between different branches of the healing art. To this end it was stipulated that no member of the Board should be a practitioner of any branch of the healing art and that the person taking the examination should not be either required or permitted to disclose the school where he had been educated or what form of healing art he expected to practice. Your Committee felt that this was the fairest of all Basic Science Bills it has seen.

In further pursuance of the Committee instructions, the Nashville members of the Committee called Mr. James Hardin, one of the Governor's secretaries, and asked for an opportunity to confer with the Governor in regard to the bill. Mr. Hardin stated that the Governor never made any decisions on medical matters without the advice of Dr. Williams, Commissioner of Health. He suggested that we present the matter to Dr. Williams, and have him analyze the bill and present his analysis to him, Mr. Hardin, who would then study it himself and discuss it with the Governor. The bill was sent to Dr. Williams who was already familiar with it in a general way. He studied it carefully and presented an analysis with recommendation of its passage to Mr. Hardin. The Nashville Committee visited Mr. Hardin at his office in the Governor's suite and Mr. Hardin assured us that he would take it up with the Governor and that it would be better for us not to bother with disturbing the Governor. We did not wish to intrude upon the Governor's time and felt that further insistence upon seeing him would be considered an intrusion. We entertained no fear that the bill would be opposed in that quarter. Just here it may properly be recalled that just after Governor Cooper was first elected and just before the 1939 session of the legislature Drs. Edwards, Shoulders, Shofner, of Nashville, and Dr. T. R. Ray, of Shelbyville, did visit Governor Cooper in the interest of a similar bill which it was planned to have introduced at the 1939 session. Governor Cooper received the Committee very courteously and while he did not endorse the bill he certainly indicated no opposition. He requested that the bill be not introduced at that session since he had his hands full with a legislative program of his own. This was agreed to and the Committee left with the impression that the bill would have the Governor's support when it was introduced two years later. This was not promised or even definitely implied but was an impression.

On December 29, 1940, the Chairman of the Legislative Committee called a meeting of the Committee as a whole at the Hermitage Hotel, Nashville, to go over final plans just before the legislature met. Those present were Drs. Everett, Roberts, Edwards, Shoulders, and Shofner, and Mr. Mosby, our attorney. At this meeting the whole situation was canvassed and it was decided that more intensive efforts should be made to arouse the profession to the need of bringing pres-

sure to bear upon their representatives in their home communities.

Dr. Everett reported that so far all efforts to obtain an interview with Mr. Crump had failed.

Shortly after this meeting a large number of telephone calls were made by the Nashville members of the Committee and just after the legislature met this was intensified. The response to this effort was extremely gratifying and by the time the bill was actually introduced it was evident that the work back home had had its influence.

Shortly after the legislature convened Drs. Edwards, Shoulders, and Shofner were visited by a chiropractor from Jackson, Tennessee, named Carrick, accompanied by a man named Bradfield, who stated that he was both a chiropractor and a naturopath. Dr. Carrick stated that he was the Chairman of the Legislative Committee of the Tennessee Chiropractic Association and that Dr. Bradfield was the chairman of a similar Committee representing the naturopaths. Both of these gentlemen asked to see copies of the proposed Basic Science Bill. They were sent to the office of Mr. Mosby who was asked to grant this request. This was done. These gentlemen then asked for further conference with the Committee and this was arranged and Mr. Mosby was asked to be present. Dr. Carrick stated that although he had a feeling of opposition to Basic Science Bill, in general he could not find any objections to our bill. He also stated that he thought the chiropractors needed some regulation to help them "clean house." He further stated that graduates of the better chiropractic schools could pass such examination but that those from inferior schools could not and ought not to be licensed. He further stated that he planned to introduce a bill changing the requirements for practice of chiropractic and that if the Medical Association would not oppose his bill he would guarantee that the chiropractors would not oppose our bill.

It so happened that there had come into the Committees' hands a pamphlet issued by the President of the State Chiropractic Association which had violently and scurrilously attacked not only the Basic Science Bill but the medical profession as well. We asked Dr. Carrick how he could reconcile this attack with his promise that the chiropractors would not oppose our bill. He replied that he had full power to decide all legislative matters for his group and that the President of the Association had spoken without knowledge of the bill and that anyway the President was under his, Carrick's, control and that he would see to it that such attacks were discontinued.

Dr. Bradfield wished to have passed a bill to license his group to practice naturopathy, which seems to be a form of chiropractic which is already practiced without a license. Both the proposed bills seemed harmless enough to your Committee and it was agreed that we would offer no



opposition to them but it was not agreed that we would give them support. On the other hand, these gentlemen promised to actively support the Basic Science Bill.

At this point it might be stated that the Committee had learned many months before through the American Medical Association that the National Chiropractic Association had appropriated money to fight the Basic Science Bill in Tennessee. Dr. Carrick and Dr. Bradfield admitted that this was true but stated that there could be no objection to a bill as fair as ours.

Your Committee had considerable mental reservation in accepting Dr. Carrick's promise at face value but was willing to accept his help if it should be forthcoming.

In the meantime the Nashville members had an interview with one of the leading osteopaths of Nashville who agreed that the bill we wished to pass was fair and proper and expressed his personal approval of it but could not speak for his group. He promised, however, to bring the matter to the attention of his fellows. Mr. Mosby was invited by Dr. Shackleford to discuss the bill. This he did. Dr. Shackleford presented notes of certain suggested changes and indicated that such changes would make the bill acceptable to the osteopaths. Mr. Mosby presented these suggestions to us and they were approved by us with the exception of one or two which would have completely emasculated the bill, really nullified it. We reported back to the osteopaths and no agreement was reached with them.

After the introduction of the bill it developed that Drs. Carrick and Bradfield, instead of supporting the bill, asked to appear before the Legislative Committee on Public Health and objected to the bill on the grounds that it was unfair to their groups. The Legislative Committee then decided to have a public hearing in the House of Representatives.

At this meeting Drs. Edwards and Shoulders simply and clearly presented the purposes of the Basic Science Bill. It was opposed by Dr. Carrick and other chiropractors and by the osteopaths. The chiropractors even had their so-called International Secretary to argue their case. Dr. Bradfield had another change of heart and stated that he considered the bill a fair one.

As was reported in the February JOURNAL the bill was finally passed by the Senate on February 5 by a vote of nineteen to three and by the House on February 6 by a good majority. We felt that the fight was won and it was reported in the February JOURNAL.

This Committee has made a preliminary report which covers our subsequent interview with the Governor and his veto of the bill. This preliminary report is now included in this report. (See March JOURNAL, page 104.)

The interview took place at about 3:00 P.M. Saturday, February 15. The veto message was

sent to the legislature after 10:00 P.M. at which time the legislature was only technically in session and there was no opportunity to pass the bill over the Governor's veto.

The veto message is as follows:

"I herewith return Senate Bill No. 314 without my approval, as it does not appear to be in the public interest."

(Signed) PRENTICE COOPER, Governor.

Report referred to the Reference Committee on Reports of Committees.

In the absence of Dr. W. C. Dixon, Chairman, the report of the Liaison Committee was read by Secretary Shoulders.

#### REPORT OF THE LIAISON COMMITTEE

The Liaison Committee has not held a meeting during the past year.

The only matter referred to it was as to the advisability of the State Society sponsoring the pneumonia control program.

A ballot by mail was taken. This ballot was favorable to the program and the Board of Trustees was so advised.

W. C. DIXON, M.D., Chairman.

The report was referred to the Reference Committee on Reports of Committees.

Report of Insurance Committee.

In the absence of the Chairman, Dr. A. F. Cooper, Dr. C. M. Hamilton read the report of the Insurance Committee.

#### REPORT OF INSURANCE COMMITTEE FOR 1941

*House of Delegates of the Tennessee State Medical Association:*

Gentlemen:

Your Insurance Committee herewith submits its report on the status of the group accident and illness coverage carried in the National Casualty Company of Detroit by members of the Association.

During the period from April 1, 1940, to April 1, 1941, fourteen claims were paid which totaled \$1,257.10, an excellent claim experience. One claim is pending. There are now 106 policies in force. A number were lost because of death, lapse of policies and the fact that some of our younger members who have gone into the army dropped their insurance until they resume private practice. It may be well to state here our master policy does not prohibit army service and some of our members who have been called into army service have continued their insurance. We are not at present in a state of war and if, or when, we do so become what ruling insurance companies will make on that point remains to be seen.

Mr. W. M. Tankard, of the J. O. Tankard Insurance Agency of Nashville, which represents the National Casualty Company, states they have continued their efforts to keep our Group Plan before the membership by advertisements in the



JOURNAL, advertising matter, by circular letters, and by personal calls. He states, further, it is their intention to begin a new campaign for members in the near future.

We urge our members to avail themselves of the excellent coverage afforded under the provisions of our Group Plan. We feel quite safe in saying it is the best that can be obtained.

A. F. COOPER, M.D., Chairman.

C. M. HAMILTON, M.D.

KYLE COPENHAVER, M.D.

DR. HAMILTON: I have a report from Dr. Cooper of the Agency, which gives a list of the claim payments that have been made, which total \$1,257.10. It doesn't tell how much has been collected, but there are over a hundred policies in force and they have evidently done pretty well.

Report referred to the Reference Committee on Reports of Committees.

#### REPORT OF COMMITTEE ON POSTGRADUATE EDUCATION IN PEDIATRICS

In the absence of Dr. J. M. Lee, Chairman of the Postgraduate Course on Pediatrics, Dr. Shoulders read the report.

*To the House of Delegates, Tennessee State Medical Association:*

The postgraduate course in pediatrics, sponsored by the Tennessee State Medical Association, assisted by the Tennessee State Department of Health, the School of Medicine of Vanderbilt University, the College of Medicine of the University of Tennessee, and the Commonwealth Fund, was started February 1, 1939, and completed in January, 1941. The program was made convenient to all parts of the state, teaching centers being located in forty-four different towns, the centers being chosen so that they would be most conveniently located to the largest number enrolling for the course.

During the two years that the program was being offered, 1,028 doctors enrolled, many graduate nurses attended the lectures as guests of the State Medical Association, and forty-two lectures were given to lay audiences with an attendance of 6,841. The instructor held 865 free consultations over private patients of physicians enrolled for the course.

The total expenditures for the two-year program amounted to \$34,290.92. For each physician enrolled the expenses was \$33.35. The actual expense of this program was less than estimated and at its close your Committee had a surplus of more than \$7,000. This surplus is being refunded to the contributing agencies in proportion to their original contributions. The accounts of the Committee have been audited by certified public accountants and copies of the audits have been furnished to all contributing agencies.

possible by the untiring efforts of Dr. Thompson, Instructor; Mr. L. W. Kibler, Field Organizer; and

Mrs. Josephine Tate, Secretary, assisted by the officers and members of the State Medical Association. The press of the state gave freely of its news space in aid of this undertaking. Mead Johnson & Co. generously provided motion picture projector with sound apparatus and many valuable motion picture films which added greatly to the program. To these and all others who have assisted in making this program possible the Committee on Postgraduate Instruction in Pediatrics is profoundly grateful and herewith tenders its thanks.

Respectfully submitted,

JOHN M. LEE, M.D., Chairman.

Report referred to the Reference Committee on Reports of Committees.

Dr. J. Marsh Frere read the report of the Committee on Medical Education.

#### REPORT OF COMMITTEE ON MEDICAL EDUCATION

*Mr. Chairman and Delegates:*

Your Committee on Medical Education had a meeting during the annual meeting of our Society, in Chattanooga, last year. We all agreed to continue to urge immunization against preventable diseases and to request each county medical society, in each of our sections, to have separate programs dealing with cancer, tuberculosis, syphilis, and other health matters.

My task in Chattanooga in this regard is made very light due to the fact that we have a very active Health Council in Chattanooga. Eighty-nine members of the Chattanooga and Hamilton County Medical Society have accepted the Health Council's invitation to make talks. Fifty-five talks were given on varied health subjects and the audiences numbered over 12,958. This does not include those talks given over our three local broadcasting stations.

Dr. J. R. Reinberger, Chairman of the Committee on Maternal Welfare, has been on the sick list during the summer and fall and states that as a result there has been very little activity on his Committee.

Dr. Frazier Binns, Chairman of the Committee on Child Welfare, informs me that his Committee has had no matters referred to it for consideration during the past year and that they are desirous of cooperating to the fullest extent with the House of Delegates in any problems presented to the Committee in the future.

Dr. W. S. Rude, Chairman of the Committee on Tuberculosis, reports that his Committee met in November to discuss proposed legislation for a centrally located tuberculosis hospital for surgical cases. All members of his Committee were in favor of the proposed legislation and advised the Legislative Committee and the Public Health Council accordingly.

Committee, informs me that his Committee has been functioning during the past year. Their

started a few years ago is gradually gaining momentum each year.

Dr. John M. Lee, Chairman of the Committee on Postgraduate Instruction in Pediatrics, will make a detailed report to the House of Delegates, as this course was completed in January, of this year. As usual, his Committee did a good job, for over a thousand doctors in the state enrolled for the course.

Respectfully submitted,

J. MARSH FRERE, M.D., Chattanooga, Chm.

J. M. LEE, M.D., Nashville.

W. C. CHANEY, M.D., Memphis.

R. B. WOOD, M.D., Knoxville.

H. B. GOTTEN, M.D., Memphis.

D. W. SMITH, M.D., Nashville.

Reports referred to Committee on Reports of Committees.

#### **REPORT OF COMMITTEE ON MEMOIRS**

The Committee on Memoirs did not respond when called.

#### **REPORT OF COMMITTEE ON MATERNAL WELFARE**

Dr. J. R. Reinberger read the report of the Committee.

*House of Delegates, Nashville, Tenn.:*

The Committee on Maternal Welfare has nothing new to report in the way of activities for the year 1940. As Chairman of this Committee I want you to know that illness and convalescence prevented much indulgence for the Committee. I want to take this opportunity to thank every member of this Committee for their efforts and cooperation during my terms as chairman. I believe that with renewed effort a comparison of maternal and infant deaths before and after the giving of courses in obstetrics and pediatrics should be made. This surely will indicate the savings of mothers and babies which is a grand profit for the time, efforts, and funds that were necessary to place such remarkable postgraduate instruction before all physicians of the state of Tennessee.

Dr. Williams suggested that at least two or three years elapse following such courses before a study be made.

JAMES R. REINBERGER, M.D., Chairman.

Report referred to the Reference Committee on Reports of Committees.

#### **REPORT OF COMMITTEE ON CHILD WELFARE**

Dr. Frazier Binns, Chairman, reported as follows:

The Committee on Child Welfare has not met during the past year and has had no matters referred to it for consideration.

The Cancer Committee has prepared its educational program so that ninety-five counties have been sent literature. Eighty-two of the ninety-five counties have more or less enlisted in the program, so that during the past year we had gross receipts of approximately \$13,000.

Hearing this report of the Governor, I don't know whether the Committee will undertake it in the morning or not, but we know that Georgia does have a wonderful setup. I have all their literature on the way they handle all their cases, and in the next few years we do intend to approach the Legislature for a sum of about \$50,000 to be used in cancer work and outlined so that it will be under the direct supervision of the medical profession. I don't know how many years it will take to get that through, but we are going to meet in the morning and begin to think about this and to discuss it.

#### **REPORT OF COMMITTEE ON PHYSICAL THERAPY**

Dr. R. C. ROBERTSON (Chattanooga), Chairman: I might say in explanation that the work of the Physical Therapy Committee was undertaken only after communication with the Council of Physical Therapy of the American Medical Association. After various communications from them, the following study was made.

Dr. Robertson read the report of the Committee on Physical Therapy.

In the absence of available published information regarding the status of physical therapy in the medical schools and hospitals of the state, it was deemed advisable to compile these facts. A questionnaire (exhibit A attached herewith) was sent to the deans of the following medical schools:

Walter S. Leathers, M.D., Vanderbilt University, School of Medicine, Nashville.

O. W. Hyman, Ph.D., University of Tennessee, College of Medicine, Memphis.

Edward L. Turner, M.D., Meharry Medical College, Nashville.

A questionnaire (exhibit B attached herewith) was also sent to the superintendents of hospitals within the state which are fully approved by the American Medical Association—namely:

Chattanooga: (1) Baroness Erlanger

Knoxville: (2) Knoxville General

Memphis: (3) Baptist Memorial, (4) John Gaston, (5) Methodist, (6) St. Joseph.

Nashville: (7) George W. Hubbard, (8) Nashville General, (9) St. Thomas, (10) Vanderbilt University.

Replies were received from all of the above. The following information was obtained:

None of the above medical colleges maintain a separate department of physical therapy, and no postgraduate course of instruction is given. At



the University of Tennessee, twenty-two hours of didactic and thirty-three hours of clinical instruction are given by the department of radiology. This course is compulsory. No instruction in physical therapy is given at Vanderbilt. At Meharry four hours of didactic instruction are given by each of the following departments: orthopedic surgery, radiology, and general therapeutics. The instruction given by these various departments is based upon the American Medical Association handbook of physical therapy and is compulsory in the third and fourth years.

Within the above ten hospitals physical therapy is employed in five (3, 4, 5, 6, 7) and in one additional (10) was employed until January 1, 1941, at which time it was discontinued because a qualified physiotherapist was not available. In the latter hospital reopening of this department is planned as soon as a qualified physiotherapist is available. A separate physical therapy department is maintained by one (3), is combined with X-ray and laboratory in two (6, 7), and existed as a separate department until closed in another (10).

Physical therapy is supervised by a licensed M.D. in one (5), by a graduate nurse and licensed physiotherapist until department closed in one (10), and in two hospitals by a licensed physiotherapist (3, 6). In one hospital (3) the type of physical therapy to be employed is determined by the head of the physical therapy department and in the remaining four (4, 5, 6, 7) this is determined by consultation of physical therapy department with the attending man or resident.

Actual treatment is given by a nurse in one (4), by a trained technician in one (5), by a technician and students in one (6), by a member of the X-ray staff in one (7). The patient's response to treatment is determined by the resident in one (4), by the head of the physical therapy department in two hospitals (5, 6), and by chief of service in one (7). In no instance is physical therapy permitted by osteopath, chiropractor, or similar practitioner. Eight of the hospital superintendents (1, 2, 3, 4, 5, 6, 7, 10) feel physical therapy is of definite value; this question was not answered by two (8, 9).

Remarks of interest were as follows:

"When our budget is sufficient, we expect to open and employ a full-time physical therapy department." (1)

"I think a well-equipped and properly-operated department of physical therapy would be invaluable in a general hospital." (2)

"Physical therapy has fallen into disrepute, due to improper technique and untrained personnel. Suggest to stimulate interest by: (a) staff conference of case reports and interview with patients benefited; (b) add rotating service for interns; (c) committee appointed for physical therapy." (6)

"We would like to reopen our physical therapy department if a qualified person were available." (10)

N.B.—The numbers used in this report refer to the number of the hospital in initial list.

### Summary

Based upon the data submitted by the deans of our three medical colleges, it appears that very limited instruction in the various types of physical therapy is being received by our undergraduate medical students, and that no facilities are now available within the state for postgraduate study.

Based upon reports received from the hospitals within the state which are fully approved by the American Medical Association, properly administered physical therapy is felt to be of value by eighty per cent of the superintendents, and is employed by fifty per cent of these hospitals at the present time. A separate department of physical therapy is maintained at present in only one hospital, but was maintained until recently in another, where reopening is desired. Licensed physicians or licensed physiotherapists are now employed in three hospitals and were employed in a fourth until the department was closed.

At the present Tennessee is without legislation to regulate the practice of physical therapy in its various forms. Licensing of practitioners is not required and for the most part they are free to practice without prescribed training, medical supervision, or control.

It is felt this report presents an accurate picture of the present status of physical therapy within the state. It is assumed that in hospitals not approved by the American Medical Association (excepting certain special hospitals) the status of physical therapy is not of a superior order to that within the hospitals so approved. A meeting of the entire Committee has not been held, but is planned during the present state meeting, at which time it is hoped definite suggestions may be formulated.

Respectfully submitted,

ROBERT C. ROBERTSON, M.D., Chairman.

### Exhibit A

1. Is physical therapy included as a separate and distinct course in your curriculum?
2. By what department is this instruction given?
3. Is the instruction given in this subject didactic? Clinical? Combined didactic and clinical? (Please include the credit hours of each.)
4. During what year of medical study is the above instruction given? Is it compulsory or elective?
5. Do you offer a postgraduate course of instruction in physical therapy? What is the duration of this course?
6. Remarks: (Please include such remarks as you may desire relative to this subject as our activities for the present are limited to an attempt to determine the use and abuse of physical therapy by licensed physicians, hospitals, and others within the state. Your cooperation will be deeply appreciated.)



## Exhibit B

1. Is physical therapy employed in your hospital?
2. Do you have a separate department of physical therapy?
3. Is the head of this department a licensed physician, graduate nurse, or licensed physiotherapist?
4. Is the type of physical therapy to be employed determined by the head of this department, by the responsible attending man, by conference of these two, or by someone other than the above?
5. If you do not have a separate department of physical therapy, who determines the type of treatment to be employed?

Who actually gives such treatment to the patient?

Who determines the patient's response to treatment?

6. Are physical therapy treatments permitted in your hospital by outside licensed physiotherapists?

By osteopaths?

By chiropractors?

By other than the above?

7. What type of cases are treated in your hospital, i.e., medical, surgical, orthopedic, pediatric, obstetrical, general?

8. Do you feel physical therapy is of value as a therapeutic agent?

In what specific type of case do you consider it of greatest value?

9. Remarks: (Please include any additional information which will enable us to form a true picture of the situation, together with your frank suggestions for improvement.)

Report referred to the Reference Committee on Reports of Committees.

### REPORT OF COMMITTEE ON INDUSTRIAL HYGIENE

In the absence of Dr. Cecil Newell, Chairman, the report was read by Dr. Marsh Frere.

*Gentlemen:*

The following is the third annual report of the activities of the Committee on Industrial Hygiene.

We have held one regular meeting since the last report and have held frequent communications with each other through correspondence. We have assisted the American Medical Association's Council on Industrial Health and the Council on Medical Preparedness whenever possible.

Our card index of more than 3,000 physicians in Tennessee has been completed. We are now endeavoring to find out the amount of industrial work, if any, these physicians do, and what is their relation to industrial health.

The Committee wishes to urge the House to arrange for one or more lectures on Industrial Hygiene in the extension course this year by the Commonwealth Fund.

Many of the state medical associations are hav-

ing their component county societies form Industrial Hygiene Committees. Our state Committee could certainly function more efficiently if such subcommittees were available. We would, therefore, like to have the county societies appoint such Committees and will attempt to arrange same, if we have the backing of the House.

In January, our Committee had official representation at the American Medical Association's Third Annual Congress on Industrial Health held in Chicago. Does the House wish to continue to appropriate this expense for the delegate from our Committee to attend these annual congresses? This is in accord to wishes of the American Medical Association.

Respectfully submitted,

CECIL E. NEWELL, M.D., Chairman.

C. F. N. SCHRAM, M.D.

A. R. McMAHAN, M.D.

E. L. RIPPY, M.D.

Report referred to the Reference Committee on Reports of Committees.

### REPORT OF COMMITTEE ON FRACTURES

Dr. Duncan Eve read the report.

*To the House of Delegates:*

As customary, we still put on a fracture exhibit and have several papers on the subject of fractures on the program at our annual meetings.

Accidents are one of the greatest causes of death, permanent disability and prolonged morbidity. Results of accidents, fractures constitute the major problem. Between a million and a million and a half fractures occur each year in this country. Treatment has improved in the last ten or fifteen years, but there is still great need for campaigning for better care. For some twenty years the College of Surgeons has had a Committee on Fractures for the improvement of handling and the treatment of fractures.

Your Committee still believes in the necessity for improved methods of teaching in medical schools. The overstuffed medical student has little time to give to fractures. Until fracture instruction has been greatly improved in the medical school and the average hospital, there is need for more postgraduate education.

Your Committee suggests a program for fracture subjects, to have each county medical society

DUNCAN EVE, M.D., Chairman.

Report referred to the Reference Committee on Reports of Committees.

### REPORT OF THE ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

THE SECRETARY: Mr. Speaker, the Chairman of the Committee to the Woman's Auxiliary, Dr. Lester, asked me to read this report for him.

"This is to advise you that the Advisory Committee to the Woman's Auxiliary of the Tennessee State Medical Association has no report to make."

J. D. LESTER, M.D., Chairman.

# **REPORT OF THE DELEGATES TO THE A. M. A.**

**THE SPEAKER:** The report of the delegates to the A. M. A. has already been published in the JOURNAL, has it not?

**THE SECRETARY:** Yes.

New business was called for by the Speaker.

Is there any new business to come before us? If not, we stand adjourned until 9:00 A.M. tomorrow morning.

The meeting adjourned at 3:40 o'clock P.M.

## **WEDNESDAY MORNING SESSION**

Dr. E. R. Zemp, Speaker of the House, called for order at 9:10 A.M.

## **COUNCILORS' REPORTS**

The first on the agenda was Councilors' reports. First District, Dr. L. E. Dyer, Councilor.

### **First District**

Dr. Dyer read the statistical report (for which see the tabulation at the close of Councilors' reports) and spoke as follows:

**DR. DYER:** One thing I would like to say about these counties is in connection with Dr. Shoulders' remarks yesterday afternoon when he stated that when we have a larger group, we get more benefit from it, and that is borne out from this new organization of these three counties. I attended their last meeting at Johnson City, at which time they had Dr. Jackson from Philadelphia. There were over a hundred doctors present at their last meeting. I looked over that group, and there was Dr. Zemp, of Knoxville, who had driven over a hundred miles to hear this program, which was a didactic lecture very helpful to all of us—really a treat. I noticed that at their next meeting, which is to be at Elizabethton, they have on the program another outstanding doctor, Dr. Dodson, from Richmond, and they will likewise have a big group present at that time.

That shows that when they are consolidated, they put forth more effort, and a great deal more benefit is derived.

I am surrendering herewith the charters from Carter, Unicoi, and Washington Counties, and ask for a new charter from this group, to be given to these three counties acting from now on as a component society of one.

**THE SECRETARY:** Do you move that?

**DR. DYER:** I make that motion.

**DR. S. R. MILLER (Knoxville):** I move that a charter be issued to that society.

**DR. W. B. BURNS (Memphis):** I second that motion.

The motion was put to a vote and carried.

**THE SPEAKER:** Gentlemen, these reports may seem a little tedious and dry to you, but this is the life of our Society. The work of these Councilors is

in the cities. I think we ought to encourage them by at least attentively listening to their reports and by urging them on to even better work than they are doing.

Second District, Dr. S. R. Miller, Councilor.

### **Second District**

Mr. Speaker and House of Delegates:

There has been no material change in the Second Councilor District during the last year.

Effort has been made to combine Campbell and Anderson Counties, and some progress has been made, but the union has not been completed.

If and when these combine, Union and Scott should join them, but I doubt if there will be a half dozen physicians in both counties. They have had very small membership, and some have died in the last two or three years.

We have had 234 active members reported—we have lost six by death and six for other causes. We have had a gain of ten new members, and will have more new members before the end of the year.

We have had 126 meetings and 107 papers.

We still feel that the only material improvement that can be made at the present time is by combining counties, but the majority of the members do not seem disposed to combine. I do not think that the Councilor should force this upon the unwilling members. Probably the House of Delegates should order counties to combine until they have twenty-five active members.

Respectfully submitted,

S. R. MILLER, M.D.

**DR. MILLER:** Whether you want to do that or not, I don't know, but if the whole Council does it, it will be easy. My idea is to let this House order the Councilors and the societies to combine until they get twenty-five active members, that to be worked out as best they can; and if they don't do it, then next year order the Councilors to do it, because we will have a plan at that time.

**THE SPEAKER:** Dr. Miller, what is their objection to combining?

**DR. MILLER:** Their objection to combining is just inactivity. They think we will get along as we have. Has Scott County reported?

**THE SECRETARY:** I couldn't answer for certain.

**DR. MILLER:** I have tried in every way to find out about Scott County. They haven't had a meeting. I think they reported last year and paid their dues, but they had no meeting of any kind. The same officers (if they have officers) are holding over who have been holding over for three, four, or five years. I can't do a thing with them. I have written the postmaster, and even he won't give me any information. I have talked to people who live out there and they can't give me any information.

They're functioning during the Union County. Their

reports back, and I hope you will discuss it freely.  
Third District, Dr. H. A. Laws, Councilor.

### Third District

(See tabulation for report.)

Fourth District, Dr. J. T. Moore, Councilor

### Fourth District

(See statistical tabulation.)

I have reports from seven counties in Fourth District: Cumberland, Macon, Overton, Putnam, Smith, Sumner and Wilson.

The total membership in these counties is sixty-five.

Two counties, Putnam and Smith, met every month. Smith County had eleven meetings. The remaining counties had from two to eight meetings.

There are eighteen eligible doctors in these seven counties who are not members.

These counties had seven new members, one in Overton, one in Macon, one in Smith, one in Sumner, three in Wilson.

There were four deaths: one in Macon, Dr. P. East, Lafayette; one in Sumner, Dr. J. M. Oliver, Portland; two in Wilson County, Dr. R. E. Johnson, Lebanon, Dr. L. L. Tilley, Lebanon.

Dr. C. N. Akens of Monterey, Putnam County; Dr. H. H. Taylor of Cookeville, Putnam County; and Dr. O. R. Hill of Lebanon, Wilson County, were called for active duty in the army. They are captains in the Reserve Corps.

Several small counties in this district have no medical society.

J. T. MOORE, M.D., Councilor.

Fifth District, Dr. V. S. Campbell, Councilor.

### Fifth District

(See statistical tabulation.)

### Sixth District

Sixth District, Dr. H. S. Shoulders, Councilor, had no report.

### Seventh District

Seventh District, Dr. C. D. Walton, Councilor.

### Eighth District

Eighth District, Dr. Jack Thompson, Councilor.

(See statistical tabulation.)

### Ninth District

Ninth District, Dr. E. H. Baird, Councilor, read his report.

Reports received from seven counties—five active among the seven. Tri-County: The Dyer, Lake and Crockett; Lauderdale, Gibson, Tipton, and Haywood Counties.

Tri-County (Dyer, Lake and Crockett) and Gibson County especially active.

Effort is being made to join Obion County to Dyer, Lake and Crockett.

For detailed report of the seven counties see tabulation.

General condition of medical activity and membership about the same as in previous reports.

E. H. BAIRD, M.D., Councilor.

Tenth District, Dr. W. Britt Burns, Councilor.

### Tenth District

(See statistical tabulation.)

## STATISTICS OF COUNCILORS' REPORTS

Some districts and some counties in other districts failed to make reports. Below are all the reports as read at the meeting.

COUNTY and DISTRICT	Members in County	Physicians in County	Eligible Nonmembers	New Members	Died During 1940	Dropped	Society Meetings	Average Attendance	Papers Read
FIRST DISTRICT—									
Cock	9	14	5	0	0	0	12	70%	6
Greene	18	20	2	0	0	0	11	12	15
Sullivan- Johnson	42	75	15	8	2	5	10	18.02	8
Washington- Carter	59	70	7	4	0	0	10	60	15
Unicoi	59	70	7	4	0	0	10	60	15
SECOND DISTRICT—									
Anderson	8	13	5	1	1	2	12	6	10
Blount	25	28	1	1	0	0	50	17	36
Campbell	23	26	2	0	1	1	4	7	4
Hamblen	16	15	0	2	1	1	12	10.8	10
Knox	154	185	6	5	3	2	36	55	35
Loudon	8	11	3	1	0	0	12	7	12
Polk	6	6	6	0	2	0	0	75%	2
Scott	6	6	6	0	2	0	0	75%	2
THIRD DISTRICT—									
Bledsoe	2	4	0	0	0	0	0	0	0
Bradley	16	19	3	1	0	1	10	10	10
Franklin	9	16	6	3	0	1	12	6	4
Grundy	4	4	0	0	1	0	2	75%	0
Hamilton	157	200	25	10	3	2*	38	53	46
Monroe	13	13	0	0	0	0	12	7	8
McMinn	17	18	1	3	0	1	8	11	20
Polk	7	11	4	0	0	0	2	3	0
White	9	10	1	0	1	1	11	8	9
FOURTH DISTRICT—									
Cumberland	7	12	5	0	0	0	6	85%	6
Macon	3	7	3	0	1	1	4	3	0
Putnam	9	14	5	0	0	0	12	6	12
Overton	6	9	3	1	0	1	2	5	2
Smith	10	13	3	1	0	0	12	8	11
Sumner	14	22	19	1	1	0	8	10	8
Wilson	16	16	1	3	2	1	11	8-11	7
FIFTH DISTRICT—									
Rutherford	21	22	5	1	0	3	12	16	12
EIGHTH DISTRICT—									
Carroll	9	15	6	1	0	3	12	8	25
Fayette	16	22	6	4	0	6	9	8	18
Hardeman	14	16	15	0	0	0	6	10	3
Henry	58	37	1	2	0	2	10	30	15
Madison	6	10	4	0	1	0	0	0	0
McNairy	6	10	4	0	1	0	0	0	0
NINTH DISTRICT—									
Dyer-Lake- Crocket	33	43	11	2	1	1	10	27	31
Gibson	24	27	3	1	0	0	11	15	22
Haywood	9	12	3	0	0	1	12	8	12
Lauderdale	5	13	8	0	0	2	1	5	0
Tipton	8	10	2	1	1	1	11	7	10
TENTH DISTRICT—									
Shelby	375	400	20	16	6	0	12	68	44

\*Transferred.

## REPORT OF COUNCIL

Dr. S. R. Miller, Chairman of the Council, submitted a report from the Council regarding the Volunteer State Medical Society (colored).

The report was referred to the Committee on Reports of Officers.



# **REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF OFFICERS**

DR. M. S. ROBERTS, Chairman of Reference Committee on Reports of Officers:

Your Committee on Officers' Reports wishes to recommend the adoption of the report of the activities of the Trustees for the past year, and also the report of the Treasurer. We believe these items are accurate and recommend their adoption.

I move that these reports be adopted.

DR. BURNS: I second the motion.

The motion was put to a vote and carried.

DR. ROBERTS: Mr. Speaker, your Committee recommends the adoption of the report of our Secretary-Editor. We believe that that part of the report relating to the organizing of sparsely settled counties into societies consisting of a sufficient number of counties to insure a membership of at least twenty-five is a recommendation which merits your very serious consideration.

Physicians located in these communities most assuredly are confronted with complex and puzzling medical and surgical problems which they seriously and conscientiously endeavor to solve. They do not have experts at their elbows upon whom they may rely. Therefore, in the interest of public health in those communities and the constant but sure advancement of knowledge in diagnosis and treatment in keeping with the general program of this organization, it is not only the duty, but it is imperative that we provide a way and use every reasonable means to make progressive advancement in medical knowledge available to every physician in these rural counties.

Physicians who have had special opportunities and training are now frequently visiting the smaller societies and reading papers based upon the experience and training of the past, and such programs are easily possible for monthly meetings where a membership and an attendance can be obtained sufficient to justify such a program.

Therefore, we urge your interested and active support of this recommendation.

I move the adoption of the report, Mr. Speaker.

DR. BURNS: I second the motion.

THE SPEAKER: Is there any discussion?

The question was called for, and the motion was put to a vote and carried.

THE SECRETARY: Mr. Chairman, may I speak to the question for just a minute?

DR. BURNS: It is already passed.

THE SECRETARY: Well, I thought it might be supplemented by additional action. I mean that to pass a resolution endorsing the idea, of course, will not alone accomplish the purposes which everyone seems to feel desirable. That is the point.

Could the House issue some sort of instructions such as Dr. Miller, I think, suggested awhile ago, to say that this House of Delegates instructs the Councilors to instruct their constituents that this

thing is going to be done, it must be done, and either do it voluntarily this year, or in another year they will be compelled to do it.

I think if this House issues some sort of specific instructions to the Councilors, and the Councilors in turn can say to the officers of these small units, "Now, we have instructions from the House that this must be done because it will so facilitate the work."

There will be some minor objections, but where it has been tried, when the objections of everyone who has come in have been overcome, as I cited in the report the other day, I don't think there is a single instance where they would ever go back, where they would tear down the organizations that have been built up by these combinations. Do you know of one?

I do think it is a very urgent matter, and I have referred to it from time to time. I would like to ask the House, then, to give the Councilors just that sort of backing now, so that in another year, if sufficient combinations have not come about, the House will then have a definite thing to act upon.

I move you, Mr. Chairman, that the Judicial Council be instructed to advise their constituent organizations that it is the urgent recommendation of the House that they make such combinations as will create units of not less than twenty-five active members.

THE SPEAKER: Is there a second to that motion?

DR. MILLER: I would like to add one word, that the secretaries of the societies be notified of that action.

THE SECRETARY: I accept the amendment. We will be glad to do that.

THE SPEAKER: Do I hear a second to that?

DR. MILLER: I second it.

DR. WEBB B. KEY (Memphis): I would like to ask a question. I wonder if Dr. Shoulders has these counties grouped in any way so that we might know something about how they will be grouped and how far each man will have to go to meetings in some other county, or wherever he will have to go.

Additional discussion showed the proposed uniting of societies would probably follow the lines of the postgraduate lecture centers.

The question was called for, and the motion was put to a vote and carried.

## **MR. JOHN M. PRATT OF THE NATIONAL PHYSICIANS COMMITTEE**

Dr. H. H. Shoulders introduced Mr. John M. Pratt, the Executive Administrator of the National Physicians Committee. Mr. Pratt addressed the House and Dr. Stanford made the following motion.

## **NATIONAL PHYSICIANS COMMITTEE**

DR. STANFORD: I would like to move that this organization indorse the efforts of the National Physicians Committee and that the Council-

ors be instructed to urge their county societies, as societies, and their members, as individuals, to support financially the National Physicians Committee.

**THE SPEAKER:** Do I hear a second to that motion?

**DR. H. B. EVERETT (Memphis):** I support the motion.

The question was called for, and the motion was put to a vote and carried.

In further discussion it was suggested that county societies appoint committees to assist the National Committee.

#### **ADDITIONAL REPORT OF THE CANCER COMMITTEE**

Dr. Monger, Chairman of the Cancer Committee, stated he had reported yesterday, but that the Committee had met again and wished to add to their report. He said: "The Cancer Committee had a meeting this morning and we decided, as one of our projects next year, with the approval of the House of Delegates, to conduct an educational program similar to the one that was conducted on pneumonia last year. A subcommittee has been appointed, composed of Dr. Howard King, Dr. H. S. Shoulders, and Dr. J. M. Lee, and they are going to work out the details. What we want to do is to have three or four men go into different county societies and conduct a symposium on the different types and phases of cancer."

Speaker Zemp referred this additional report to the Reference Committee on Reports of Committees.

#### **NEW BUSINESS**

Under the head of New Business, Dr. Stanford moved that state dues be increased two dollars per year for the benefit of the Legislative Committee. Motion seconded by Dr. Webb B. Key. Motion referred to the proper committee.

#### **MEDICAL PRACTICE ACT**

Dr. H. B. Fuqua stated he had been instructed by the Washington-Carter-Unicoi Society to report the inadequacy of the Medical Practice Act, as enforced in his section, and to ask that the Legislative Committee be instructed to try to secure the passage of a more satisfactory law.

The Speaker requested Dr. Fuqua to present the question to the Reference Committee on Resolutions.

#### **RESOLUTION**

Resolved that the Legislative Committee of the Tennessee State Medical Association be instructed to revise and/or amend the State Medical Practice Act as it exists at present.

**BE IT FURTHER RESOLVED,** that the revisions and/or amendments be such as to clearly define practice of medicine and that the penalties for illegal practice of medicine be so stringent as to command respect. We further propose that some method be worked out whereby the institution of

proceedings against illegal practice be supported by the State Medical Association and particularly the State Medical Licensing Board.

**H. B. FUQUA, M.D.,** Delegate  
Washington, Carter and Unicoi  
County Medical Society.

#### **LETTER TO THE GOVERNOR**

**DR. W. L. WILLIAMSON (Memphis):** Mr. Chairman and Members of the House of Delegates: We recently had an insult thrust at us or upon us, and I think any gentleman should resent an insult. I wish this body—and if necessary, I will make such a motion—would instruct our Secretary to write to the Governor of the State of Tennessee and tell him that we don't appreciate his veto of the Basic Science Bill, which was passed by both Houses of the State Legislature recently. He vetoed it after we had no possible recourse, to me a very cowardly act, apparently.

Also, I think we should resent the reception, as a body, which our Legislative Committee received at the hands of the Governor when they went there for a peaceable, courteous, decent interview.

I would like to have that referred to the proper committee, or make a motion, or whatever is necessary.

The Speaker requested that Dr. Williamson write this in the form of a Resolution to be considered by the Committee on Resolutions and brought back to the House for action.

No other business appearing, the House adjourned at 10:25 A.M.

#### **WEDNESDAY AFTERNOON SESSION**

Dr. E. R. Zemp, Speaker of the House, called the meeting to order at 2:20 P.M.

#### **COMMITTEE REPORTS**

Dr. Ralph Monger, Chairman of the Credentials Committee, had no report at this time.

The Report of the Committee on Reports of Committees.

Dr. J. B. Stanford read the Report of the Reference Committee on the Reports of Committees.

#### **REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF COMMITTEES**

Your Committee on Reports of Committees recommends, without comment, the acceptance of the reports of the Committee on Maternal Welfare; Advisory Committee to the Woman's Auxiliary; The Liaison Committee; Committee on Postgraduate Instruction in Pediatrics; The Committee on Postgraduate Instruction in Internal Medicine; Committee on Medical Education; Insurance Committee; Committee on Physical Therapy, and the Hospital Committee.

It also recommends the acceptance of the report of the Committee on Fractures and approves the suggestion that each county society devote a meeting to the subject of fractures.



cepted with the advice that societies in industrial centers arrange one or more programs on that subject.

Your Committee has considered the report of the Legislative Committee and feels that notice should be taken of the following facts involved in it:

1. That the Legislative Committee and officers of the State Association are due the thanks and gratitude of the House of Delegates and the membership of the State Association for the splendid work they did in securing the passage of the Basic Science Bill through both Houses of the legislature. Successful ventures of this kind should bring clearly before the profession just how much power they have in influencing legislation if and when, as in the present instance, the legislation is fair and in the interest of the public good.

2. That Governor Cooper's veto is unfortunate and regrettable for the following reasons—

- a. That it prevented the final enactment of legislation which without question was in behalf of the public good.

- b. That under our form of government the power of veto is granted an executive that it may be used to prevent the enactment of improper legislation being passed without proper consideration of the legislative bodies, or passage of legislation that was unfair to any body of citizens. Certainly no one could say that the Basic Science Bill was passed without proper consideration in that it received large majorities in both Houses after having been subjected to a public hearing before the Committees of both Houses sitting jointly, and that no one who has ever read this bill—even its opponents—has been able successfully to show any unfairness it would impose on any citizen or body of citizens.

- c. No executive in our opinion has any justification in vetoing legislation passed by the legislature unless first he has studied the act itself and is thoroughly cognizant of its every provision. Certainly in order to prevent a veto, it should not be mandatory on any profession seeking enactment of legislation to have to present it for executive approval before introducing it for passage through the legislature; as, if so, the value of legislative enactment practically becomes null and void and a totalitarian state exists.

- d. That the motive of the medical profession in seeking the passage of this bill was questioned and at least insinuations of self-interest made as well as accusations that the profession in supporting this bill was endeavoring to interfere with the right of the individual citizen to choose his own doctor. Nothing can be found in the bill to justify in any sense these insinuations and accusations.

Your Committee would urge this House of Delegates to instruct its future Legislative Committee to continue its effort to secure enactment of the

tioned the motives of the medical profession in seeking enactment of this bill. Your Committee also urges that a copy of this action of the House of Delegates be furnished Governor Cooper before it is either directly or indirectly released to the press.

JAMES B. STANFORD, M.D., Chairman.

A. M. PATTERSON, M.D.

Motion was made by Dr. Webb B. Key and seconded by Dr. Edward T. Newell that the report be adopted as read.

The motion was discussed by Dr. Kyle C. Copenhagen, Dr. Webb B. Key, Dr. Edward T. Newell, the Speaker and Dr. J. B. Stanford. The questions raised were whether the language of the report fully expressed the feeling of the Association and whether it would be wise to bring the matter to the Assembly for their information.

Upon call for the question the motion was put to a vote and carried.

#### REPORT OF THE REFERENCE COMMITTEE ON THE REPORTS OF OFFICERS

DR. M. S. ROBERTS (Knoxville): Your Committee has given careful consideration to the application of colored physicians for a charter creating what is proposed to be called a component medical society to be known as the "Volunteer State Medical Society." We recommend that this application be rejected.

First, it requires a change in our Constitution, which requires a two-thirds vote, and we believe that the controversy which this application invites will be detrimental to the best interests of our organization.

Second, we don't believe this procedure is solely in the interest of progressive medicine and public health.

Third, this is an application of a series of local societies which the colored physicians propose to organize throughout the state, and once adopted, it could not be rescinded for two years without two-thirds vote.

Fourth, we do not believe Article XIII of our Constitution has been fully complied with.

Article XIII requires that every medical society in the state be given official notice two months before this meeting before this could be voted on.

I move you, Mr. Chairman, that this report be adopted.

DR. NEWELL: I second the motion.

The question was discussed by Dr. J. B. Stanford, Dr. Webb B. Key, Dr. S. R. Miller, Dr. M. S. Roberts, Dr. Edward T. Newell, Dr. W. H. Stallings and the Speaker.

The motion to approve the Committee report was put to a vote and carried.



## COMMITTEE ON AMENDMENTS TO CONSTITUTION AND BY-LAWS

The Speaker called on Dr. E. D. Mitchell, Chairman of the Committee on Amendments to the Constitution and By-Laws.

DR. E. D. MITCHELL (Memphis): Mr. Speaker, your Committee on Amendments to the Constitution and By-Laws wishes to report, and in order to refresh your minds, I will merely read the proposal to amend Article VIII of the Constitution, which is merely the addition of a "President-Elect." I have been asked to read the whole of the modification which, I may say, has gone through the proper channels. It has been published in the JOURNAL, has laid over a year, and is now ready for action.

Article VIII, Section 1, of the Constitution shall be amended to read:

"The Officers of the Association shall be a President, a President-Elect, a Vice-President for each of the three grand divisions of the state, a Secretary-Editor, five Trustees, ten Councilors, and a Speaker of the House of Delegates. The Speaker of the House of Delegates shall be ex-officio a member of the Board of Trustees while in office. The retiring President of the Association shall be a member of the Board of Trustees for one year. Three members of the Board of Trustees shall be elected by the House of Delegates, one from each grand division of the state. The elected Trustees shall serve for a period of three years. The Board of Trustees will organize by the election of a Chairman. The Chairman of the Board of Trustees shall be ex-officio Treasurer of the Association. There shall be one Councilor for each Councilor District. The Councilors shall organize annually by the election of a Chairman of the Council."

The only change in that is the addition of the word "President-Elect."

Article VIII, Section 2, of the Constitution shall be amended to read:

"The President-Elect, three Vice-Presidents, Speaker of the House of Delegates, and the Secretary-Editor shall be elected annually for one year. The President-Elect shall assume office as President at the expiration of the term of the President. Five Councilors shall be elected annually for two years."

The only change in that is the addition of the word "President-Elect."

Article VIII, Section 6, of the Constitution shall be amended to read:

"No member who has not been a member in good standing for five years next preceding the election, or who is not in attendance at the meeting, shall be eligible for election as President, President Elect, or Vice-President."

That, again, is just adding the term "President-Elect."

Article VIII, Section 5, of the Constitution shall

assume office immediately following the Annual Meeting."

You see, this is a revision for the purpose of adding a President Elect to our Society.

DR. MITCHELL: I move its adoption.

DR. KEY: I second the motion.

The motion was put to a vote and carried.

## AMENDMENT TO BY-LAWS

A proposed change to the By-Laws was read, so that action could be taken on the following day.

DR. MITCHELL: You gentlemen were very likely all present this morning when Dr. Stanford made this statement.

Dr. Mitchell read the statement of Dr. Stanford which appears on page 311 of these proceedings.

DR. MITCHELL: And that was seconded by Dr. Webb Key of Memphis.

The motion, of course, is to add two dollars to the state dues, which two dollars would be put in a special fund for legislative purposes. That is to be the resolution that this committee is to act on in a report tomorrow.

## GREETINGS FROM DR. OLIN WEST

THE SECRETARY: Mr. Speaker, before you take up the next order of business, I received this telegram which I believe you all would like to hear.

"It is a matter of very keen regret to me that I cannot be present at the annual session of the Tennessee State Medical Association. I sincerely hope that the meeting will be a most successful one and that it will contribute greatly to the further promotion of the art and science of medicine and the betterment of public health.

"OLIN WEST."

## ELECTION OF COUNCILORS

The next order of business was the election of Councilors. The Speaker announced that terms expired in the Second, Fourth, Sixth, Eighth, and Tenth Districts. Nominations were made by members of the Nominating Committee. No other nominations were made. Dr. Jack Thompson, now in military service, was not nominated from the Eighth District. In his place Dr. G. W. Brasher was elected. In the other districts Councilors were reelected as follows:

Second—Dr. S. R. Miller.

Fourth—Dr. J. T. Moore.

Sixth—Dr. H. S. Shoulders.

Eighth—Dr. G. W. Brasher.

Tenth—Dr. W. Britt Burns.

## RECOGNITION OF DR. W. H. STALLINGS

THE SECRETARY: Mr. Speaker, if no one has any new business, I do feel that this House would like to express its sense of gratitude to a member who is present. I attempted to do it in a feeble fashion on the editorial page in the JOURNAL not long ago. I refer now to Dr. Stallings, who was

Committee to which were referred the Basic Science Bill and other medical legislation. Without Dr. Stallings and the chairman of the Committee in the Senate, who was also a doctor, I don't think we could have gotten very far.

Dr. Stallings, will you come around here and be recognized by the House?

DR. STALLINGS: Mr. Chairman and Members of the Association: I am going to take the liberty here to suggest to this delegation that we need to wake up to some of the essentials of successful legislation in behalf of the medical profession of the state of Tennessee. I think that such few quacks as there are in the state had five dollars to sponsor their legislation in the last General Assembly, and for the last six years, to my certain knowledge, more than the entire profession of the state had. And I feel that we are living in a day and an age in which clear-eyed science ought to be allowed to advance even if it has to be done at an expense to somebody. I believe the day of frauds and unclean superstitions and the cruel obsession of ignorance has passed away, and that fragment of it that remains should be totally eliminated from the face of the earth.

I don't think that the intelligent people of our state any longer carry an Irish potato in their pockets to cure their chills or skin the old bark up one way to cure one disease and down another direction to cure another; and I believe that it is within the power of this organization to totally eliminate such superstitions as that from the face of the earth.

But I don't know how to accomplish anything without something to do it with. I had an inkling that the Governor was going to veto our Basic Science Bill, and as my good friend, Dr. Shoulders, said, it required no small effort upon my part and his part and the part of a few others to put that bill through the House and through the Senate. When I got an inkling that that bill was going to be vetoed, I went to the Governor and took it up with him, and I left his office somewhat in doubt. I called the Commissioner of Health and Dr. Edwards and told them that they had better get busy, that if there was not considerable pressure brought to bear the bill was going to be vetoed, according to my humble judgment.

If there had been a fund sufficient to have wired the president and the secretary of every local organization within the state, and then if they had gotten busy and had a half dozen or a dozen members of their local societies to have wired the Governor and turned the steam on him he would have been afraid to have vetoed that bill, surely.

I hope that this organization is awake to the necessity of having something in the pot to do something with in the legislative office. You can take minor problems up there that don't amount to anything, not something on which the welfare of the people of Tennessee depends, something that is just a little selfish interest over here on the side, and there will be several hundred dollars

spent in lobbying up there for those bills, and it is through those channels that they get them through. There ought to be somebody on the field up there when that legislature convenes, and he ought to be a man that is wide awake and with nothing else to do but to put his ear to the ground and his eyes on the rail and his hand on the throttle and be ready to act and to act quickly when the circumstance demands. It is through those means and those channels that we are going to be able to bring about such legislation in Tennessee as will throw a wall of protection around its people and extend those benefits and those problems on to our future generations that you men and your forefathers in the same profession have given the best parts of your lives for.

I thank you for the recognition, and I am always glad to do anything I can in the world for the medical profession of Tennessee, because I feel that in doing that I am helping everybody, the whole people of Tennessee.

No further business appearing, the House adjourned at 3:15 P.M.

#### THURSDAY MORNING SESSION

The meeting was called to order at 9:30 by Dr. E. R. Zemp, Speaker.

#### ELECTION OF OFFICERS

The report of the Nominating Committee was called for.

#### NOMINATIONS FOR PRESIDENT

DR. L. E. DYER (Greeneville): Mr. Speaker, Members of the House of Delegates, the President for this year comes from East Tennessee, so the Nominating Committee wishes to submit the following doctors' names for your consideration: Dr. Hiram A. Laws, Jr., Chattanooga; Dr. J. B. Nelson, Chattanooga; and Dr. E. A. Gilbert, Chattanooga.

The Speaker then requested nominations from the floor. There being none, he declared the nominations closed and ordered a ballot.

Dr. Ralph Monger and Dr. H. B. Everett were appointed to act as tellers.

THE SPEAKER: Are all the ballots in?

There being no response, he declared the ballot closed and ordered a count.

The count showed twenty-seven votes, all for Dr. Laws.

The Speaker then announced the election of Dr. Hiram A. Laws by unanimous vote.

#### NOMINATIONS FOR OFFICE OF PRESIDENT-ELECT

Dr. Dyer reported for the Committee on Nominations, placing the name of Dr. J. B. Stanford, Dr. D. G. Andrews, and Dr. Arthur R. Porter, Jr., in nomination.



The Speaker asked for other nominations from the floor. There being none, he declared the nominations closed and ordered a ballot. The count of the ballot showed that Dr. Stanford had received a majority of votes and was therefore declared elected.

#### NOMINATIONS FOR OFFICE OF VICE-PRESIDENT

DR. DYER: Dr. Ward Friberg, of Johnson City, for East Tennessee; Dr. J. S. Freeman, Springfield, for Middle Tennessee; Dr. Glenn Batten, of Jackson, for West Tennessee.

Dr. Everett moved that the nominations be closed and that the Secretary cast the ballot of the House for these three nominees.

The motion was seconded by Dr. Copenhaver, put to a vote and carried. The Secretary then cast the ballot of the House for the three nominees for the office of Vice-President.

#### NOMINATIONS FOR OFFICE OF SPEAKER

DR. DYER: The Nominating Committee places in nomination Dr. E. R. Zemp, Knoxville, for the office of Speaker.

The Secretary took the gavel and presided temporarily.

Dr. A. H. Lancaster moved that nominations be closed. The motion was seconded by Dr. A. R. Porter, Jr.

The question was called for. The motion was put to a vote and carried. Then the vote on the election of Dr. Zemp was taken. After viva voce vote, he was declared elected without dissenting vote.

#### NOMINATIONS FOR OFFICE OF SECRETARY-EDITOR

Dr. Dyer placed in nomination for the office of Secretary-Editor Dr. H. H. Shoulders.

Dr. J. B. Stanford moved that nominations be closed. Dr. S. R. Miller seconded the motion. The motion was put to a vote and carried.

It was then moved and seconded that the Speaker cast the ballot of the House for Dr. Shoulders. This motion was put to a vote and carried. The Speaker then declared Dr. Shoulders elected.

#### NOMINATIONS FOR BOARD OF TRUSTEES

Dr. Dyer placed in nomination Dr. F. B. Bogart from Chattanooga.

Dr. John B. Steele moved that nominations be closed. The motion was seconded by Dr. Stanford, put to a vote and carried.

Dr. John B. Steele moved that the Secretary cast the ballot of the House for Dr. Bogart, seconded by Dr. Stanford.

The motion was put to a vote and carried.

The Secretary cast the ballot of the House for Dr. Bogart and the Speaker declared Dr. Bogart elected.

#### RESIGNATION OF DR. LAWS AS COUNCILOR

Dr. Steele then submitted the resignation of Dr. Hiram A. Laws as Councilor for the Third District.

The resignation was accepted because of his election to the office of President.

DR. JACOBS: Do we elect a new Councilor?

THE SPEAKER: No, that is done by the Board of Trustees.

Dr. M. S. Roberts, Knoxville, raised the question as to whether or not the Nominating Committee should present a nominee in view of the fact that the resignation was accepted with the House of Delegates in session.

The Speaker ruled, "We don't have to."

The Speaker then read from the by-laws, chapter six, section seven, page fifteen, revised edition for 1939, as follows: "In the event of the death, resignation, disability, or removal of any official of this Association, other than President, or a member of the Board of Trustees, the vacancy so created shall be filled by the Board of Trustees, and the officers so appointed shall serve until the next regular meeting of the House of Delegates."

Dr. Roberts then requested the privilege of introducing an amendment to the Constitution to provide that "when such vacancies occur during the interim." He thought that should be put in the Constitution next year, and would like to get it in the record now for discussion next year.

THE SPEAKER: You had better make a written resolution.

The Speaker then appointed Dr. Steele and Dr. Holder to notify Dr. Hiram Laws of his election and to present him to the body.

Dr. Laws was then presented to the House by the Speaker. Dr. Laws then spoke as follows:

DR. LAWS: Gentlemen, for fifteen years I have talked a lot in here and said nothing, and now I can't even talk. I wish to thank each and every one of you for this, and I hope that each one of you will work and help me carry this along as you have in the past. As the war is on and our ranks are going to be thin, I am going to ask each man to work a little harder. I thank you.

THE SPEAKER: I will now ask this same Committee to escort the new President to the House and present him to the House.

DR. STEELE: Shall we take Dr. Stanford up, too?

The Speaker answered in the affirmative.

#### REPORT OF COUNCILOR

Dr. Miller, Chairman of the Council, filed the report of one Councilor and said it was not necessary to read it. (Report included in statistical tabulation.)

#### NEXT MEETING PLACE

The Speaker then announced the next order of business to be that of selecting a place of meeting for next year.

Dr. Key extended an invitation on behalf of the Memphis and Shelby County Medical Society as follows:

DR. KEY: Dr. Holder was instructed by the Memphis and Shelby County Medical Society to invite you gentlemen to meet in Memphis next year, and I certainly hope you see fit to be with us if you can.

The Secretary requested the privilege of reading telegrams from the following persons and organizations in Memphis supporting the invitation of the Memphis and Shelby County Medical Society.

Walter Chandler, Mayor of Memphis; O. K. Earp, President, Kiwanis Club of Memphis; Max Ferbinger, President, Lions Club of Memphis; Phil Pigeon, President, Memphis Chamber of Commerce; Chris E. Collins, Secretary, Memphis Rotary Club.

The Speaker called for other nominations. There being none, he declared the nominations closed.

Then a vote was taken on the nomination of Memphis as the next meeting place. The ballot was taken and there were no dissenting votes.

The Speaker then declared Memphis as the next meeting place.

#### VOTE OF THANKS

DR. EVERETT: Mr. Speaker, while you are waiting for your Committee reports, I think that this House should extend a vote of thanks to the gentlemen in Nashville who have so royally entertained us during this meeting. I believe that includes the Davidson County and Nashville Academy of Medicine. So I move that we extend a vote of thanks to these gentlemen for their entertainment during this meeting.

DR. A. R. PORTER, JR. (Memphis): I would like to have the honor of seconding that motion.

The motion was put to a vote and carried.

THE SPEAKER: We do sincerely appreciate the hospitality of the Davidson County Medical Society and all others who have entertained us.

#### VETERAN MEMBERS

DR. GEORGE K. CARPENTER (Nashville): We have ten members of the Davidson County Medical Society who have been members for twenty-five years or more. They have all arrived at the age where they prefer to be veteran members. They are as follows: Drs. A. C. Bailey, S. M. Bloomstein, Charles Brower, R. B. Bogle, S. McPheeters Glasgow, J. W. Handly, F. E. Hasty, C. L. Hill, D. R. Pickens, R. O. Tucker. These men have been regular and consistent members up to the present time, but wish at this time to be enrolled as veteran members.

#### REPORT OF THE REFERENCE COMMITTEE ON RESOLUTIONS

In the absence of Dr. Manier, Dr. Dyer reported as follows:

DR. DYER: Your Committee on Resolutions has reviewed the resolution from the Cancer Committee and recommends its adoption by the House of Delegates.

Dr. Roberts moved the adoption of the report. The motion was seconded by Dr. Bogart, put to a vote and carried.

DR. DYER: Now the resolution presented yesterday by the doctor from Washington-Carter-Unicoi about the Legislative Committee. It has been submitted in writing to the Committee on Resolutions. Shall I read this?

THE SPEAKER: No. They heard it yesterday.

DR. DYER: The Committee approves this resolution provided the support of it by the future Legislative Committee does not interfere with any other legislation that the House may desire to give priority.

THE SPEAKER: You remember this resolution was to put a little more teeth in the Medical Practice Act. The Legislative Committee is going to have this same Basic Science Bill up again in two years, and we don't want anything to interfere with that, if possible.

THE SECRETARY: Mr. Chairman, may I suggest in this connection that that is a matter that comes officially under the jurisdiction of the State Board of Medical Examiners. I believe that it would be the function of the Committee on Legislation, and we should ask them, to form a liaison with the Board of Examiners with a view to working out such amendments to the law. I believe that would be a good wording. We are not trying to jam something down the throat of the Board of Medical Examiners, but we are rather in the attitude of trying to work out an improvement in the enforcement of medical legislation. After all, they have the enforcement.

THE SPEAKER: Do you make a motion to the effect that this report be referred to the Legislative Committee?

THE SECRETARY: No, I think it is moved for adoption, and I am in favor of its adoption. I merely make that suggestion as a procedure to be followed.

DR. FUQUA: Mr. Speaker, I feel that I can speak for our group when I say that we don't want anything to stand in front of the Basic Science Law. That is our prior desire. But we feel that in view of the fact that two years will elapse before this will come to a head, during that time the Legislative Committee, working in conjunction with the Legislative Committees of the various counties, could possibly work out the revamping of that act without interfering with the Basic Science Act. We do stand aside in view



had more experience than I have had, being a neophyte member, have felt it in times past—the need for this act, and as long as it can be done conveniently, we should like to ask that it be done.

THE SPEAKER: You have heard the motion. Those in favor say "aye," those opposed "no." It is so ordered.

Are there any other Committees?

#### AMENDMENT TO BY-LAWS

DR. BOGART: In the absence of Dr. Mitchell, I have a report, Mr. Speaker, which I would like to submit on the proposal of Dr. Stanford that we increase the dues of the Society two dollars a year and put that amount of money into a special fund to be used by the Legislative Committee. As it was handed to us, it is not written up as it should be in the form of an amendment, but is simply in the form of a resolution. After considering it, our Committee is opposed to its adoption now because we feel that we have sufficient funds on hand to take care of any need that the Legislative Committee might have. Our Board of Trustees gave them all they asked for this past year. If our funds were exhausted, that would be a different thing, but in view of the fact that we have the necessary funds on hand at the present time, and in view of the fact that to increase the dues now might create some friction, our recommendation is that this proposal be tabled.

THE SPEAKER: You have heard the motion that this be rejected.

DR. A. HOBART LANCASTER (Knoxville): Mr. Chairman, of course, there are a lot of men who would object to raising the dues, but right now we are in a period of prosperity and are apt to be for two or three years. It would be better to raise that money, I think, at this time and have it in the treasury ready to use, than to try to raise it two or three or four years from now, when it will be much harder to pay half the amount than it is at the present time. So I think it would be well if we could have a large sum set aside to use any time we see fit, and accumulate it and have it ready.

THE SPEAKER: Is there any other discussion?

DR. J. B. STANFORD (Memphis): Mr. Speaker, I would like to hear from the Treasurer of the Association. I think a good deal of our funds that we are so proud of was used this year in that legislative fight. We are using a good deal of funds in our postgraduate courses. As Dr. Lancaster said, the time of prosperity is the time to get it. Then when things get bad, we can reduce the dues again.

THE SPEAKER: The question that rises in my mind, if we raise these dues now, wouldn't we

opposed to any raising of the dues at this time unless it is a very minimum raise. Of course, I don't suppose that anybody in this room would object to paying two dollars more, and many, of course, active in the Society, give much more than two dollars in the course of a year to support the work of the State Association. On the other hand, the secretaries are the men who keep up the medical societies. They say that it is hard to collect the dues, and I personally know that it is, because I helped to collect out there in some cases. So I am opposed to a two-dollar raise because I think you would lose more in the state than you would gain.

However, if we can, we could increase them, say, fifty cents. It is two years now before that Basic Science Bill will come up. We have 1,600 members. That will give us \$800 and then another \$800, which is \$1,600. Then you have \$400 from the treasury, and that would give you \$2,000. We can put men in there and pass most any bill, and I believe we can pass that Basic Science Act with \$2,000. I have had a little legislative experience myself in a few cases—whiskey and things like that—and I know that goes a good long way.

Dr. Stallings will be in the Senate at that time if it works out, so we won't need to worry about the Senate on that bill. We have a good man in the House, and I don't think we will have any trouble about it.

After it is passed, spend a little money on telegrams and have about a thousand telegrams sent to the Governor to see that it is not vetoed as it was this time.

I move an amendment to that, that the dues be raised fifty cents, and that will give them \$2,000 to be set aside. I don't believe they will object to that.

THE PRESIDENT (Dr. L. W. Edwards, Nashville): Mr. Speaker, I have no intention of coming down here and taking up time, and I haven't had the privilege of hearing this discussion. I just picked it up since I came in. But I want to say to you gentlemen, after having had the experience that I have had on legislative matters over a period of years in this organization, and during the past year having gone over this state, contacting doctors personally and by correspondence, they are thoroughly aroused to the situation as it now exists, and they are ready to contribute funds to help carry this on. I think it would be a grave mistake not to put this two-dollar additional dues on. I feel certain that the doctors of this state will come to the aid of this organization in that way, and you will not make a mistake, and you will not antagonize the doctors. If the officers of the various societies over the state

will simply make a push to collect this money, I don't believe you will have a bit of trouble in doing it.

I know the feeling of the profession in regard to this Basic Science Bill, and they have come to realize that you have got to fight fire with fire. It cannot be done any other way. These other groups start out, and they assess; they make heavy assessments of their groups; and they raise large funds. I am not in favor of the Society's going out here and going into politics in a big way, but you have simply got to have funds to carry on this fight. Dr. Shoulders realizes that, and all of you do who have had to do with this fight. My point is that I believe and feel certain that the medical profession of this state is ready to cooperate by contributing money for this particular purpose.

THE SPEAKER: Let's hear from someone else. This is an important thing, either way.

DR. C. M. HAMILTON (Nashville): Dr. Stanford asked me to say something on this matter. Personally, I agree with Dr. Baird in that I believe that we might get away with less than a two-dollar increase in the dues. I think, Dr. Shoulders, we have as much money as we had last year, and we spent \$1,500 this year. The bill cost us \$1,500.

If we raise the dues a dollar, and it is two years before we have another meeting of the legislature, we would have over \$3,000. We could raise \$1,000 from the treasury. It looks to me as if we could certainly pass it with \$3,000 when we passed it once with \$1,500.

Dr. Edwards says that feeling has been aroused. That will probably do more than the money, because I think the doctors will go out and do more work than they have ever done before.

We have been contributing \$1,500 a year to postgraduate education. I don't know whether that will continue after these two years or not. That might be another saving of \$1,500.

DR. DYER: The suggestion that Dr. Edwards made can be carried out in this way: If you tell the people back home that the dues have been raised to eight dollars, they will object to that; they will resent it if you tell them the dues have been raised to eight dollars. If you tell them the dues are remaining at six dollars but that there are two dollars extra as an assessment or as a legislative fund, that this two dollars isn't dues but is a fund for legislative work, then that will go over fine and you will make a go of it through the Secretary's correspondence with the secretaries of the local societies and all the counties. Do not present it as a raise in dues, because when you mention that the dues are raised, the doctors in the small groups and the smaller places in the rural sections are going to say, "No, we will drop the whole thing"; but if you make that as a legislative fund, they are keyed up, as Dr. Edwards said, on this subject of legislative work,

and if you mention that as legislative and leave the word "dues" out of it, they will go with this 100 per cent.

THE SPEAKER: It strikes me that this motion doesn't state that it is to be limited to one or two years.

DR. ROBERTS: Knox County Medical Society has already collected and paid into this office the dues for the year of 1941. Our year begins in January. If this passes, it should be for next year and for only one year. I agree with Dr. Dyer that it should come as an assessment and should be raised for only one year, that beginning next January or whenever the local societies' years begin.

I would like to offer that as an amendment to the motion if there is a motion before the House, and I suppose there is.

DR. STANFORD: Mr. Speaker, I rise to a point of order. Is it possible to accept an amendment to this after it was introduced in its present form yesterday? If it is possible, I would be delighted to accept Dr. Roberts' amendment.

THE SPEAKER: Yes, you can amend it.

DR. STANFORD: We can't take this two-year proposition. This year's dues are paid. It is just one year that we have to collect this money.

THE SPEAKER: I think that could be stipulated in the motion.

DR. STANFORD: If it is possible to accept it, I will.

THE SECRETARY: If you accept the stipulation that it be an assessment instead of dues.

DR. STANFORD: I think that would clarify it, yes.

THE SECRETARY: Personally, I think there is an important question which should be considered, and that is what effect this would have on the fellows in the smaller societies with reference to membership. I can't answer that question, but I think that the delegates can. They are the only ones who can. They are officers and secretaries.

DR. STALLINGS: Mr. Chairman and Members of the Society, I have a twofold purpose in appearing before you again, and one of them is merely to call your attention to the stake that the medical profession of Tennessee holds in a political way if they but realize it. I know of no other class of people on earth who possess the ability and the power to go out among the voters of Tennessee and tell them what they want them to do and then have them do it. If the medical profession of Tennessee realized what cooperation means—well, I want to relate a little story here about a man who appeared at a foot log crossing a small creek, from which a lady had fallen into the water. He reached down and got her by the hair of the head, and her hair came off. Then he reached back and got her right leg, and the leg came off. Then he reached back and got his fingers in her mouth, and her teeth came out.



He said, "Look out here, woman, if I save you I'm going to have to have a little cooperation."

If the situation in Tennessee is saved along the lines which we are thinking and talking, we are going to have to have some cooperation.

It is a bad thing to put a raise of two dollars on our dues for the local men that are out in the rural sections of this state, because you will lose enough membership, in my humble judgment, to more than offset the gain. Wouldn't it be better, if you want to, to put on fifty cents or certainly not over a dollar raise? To my mind, it would be good, sound, logical judgment to make that raise, if you are going to make a raise.

It looks to me as if we ought to use what we have in our hands and quit worrying about income tax on it, and where we will place it in order to have a good safe investment. I can see no occasion on earth for this generation to be laying up a fund for some future generation, because certainly when they are wielding the medical care of the people of Tennessee, they will carry on just as you and I are trying to do now. I do think that there ought to be at least \$2,000, even \$3,000, available for getting telegrams out to the local societies and then getting telegrams back into the proper channels to bring about those conditions that we so much desire.

I want to stress especially the local societies of this state going to the candidates, and they *will* call on you now. When a man announces in the local county for a position as lawmaker of your state, the family physicians and the outstanding doctors of that community are going to be among the first men that he is going to call on. Let's have moral courage and stamina enough to stand up there and tell him what we want, and if he doesn't pledge us his support along those lines, don't let him be elected. You can do it because you go in every home; especially the rural doctors of this state go in every home in this state, and they wield an influence that they just don't realize that they have in their hands. If they would just tell them what they expect them to do and what they want them to do, they will do it.

Another thing that we should refrain from is that we should not allow an impression to get out that we are accumulating and creating a legislative fund. That is bad stuff on the other members of the legislature. This ought to be done as the other members do it—it ought to be done under cover, but it ought to be done in a diplomatic way whereby you slip right up under their arms but don't let them know how you are doing it or why you are doing it. Then when you need it, they will come to your rescue.

Thank you again for your time.

THE PRESIDENT: Mr. Speaker—

THE SPEAKER (interposing): I hold that you will have to wait until after Dr. Wood speaks.

DR. E. G. WOOD (Knoxville): The question hasn't been answered yet how much money we have in the treasury of the society. Have we got any money or have we not? Does anybody know anything about it? I think if we have money there, the idea is to spend it.

They say these are prosperous times. This may be a prosperous time for some of them, but a lot of these fellows came here who couldn't even afford the trip. If you remember and think back, we have more new men and more young men who have come into the state and society in the last twelve months than I ever knew. There is not one out of every twenty of them who has any money to pay out.

Another thing, we have been around the legislature, and we have contributed much to legislative work for a number of years, and I don't know whether we have ever profited by anything that we ever put out in the sense of the legislative work, and if we ever got anything through we have never heard about it.

I would like to know, before I vote any, if we have any money, and if we have, let's use it while the using is good, before somebody comes along and gets it.

DR. K. C. COPENHAVER (Knoxville): I am opposed to raising the dues fifty cents, a dollar, or two dollars, or to making any kind of assessment, because it was stated here yesterday that we had money and that the Trustees were instructed to buy some baby bonds with this money. They found out they couldn't do it, and then they loaned it out on six per cent real estate. I figure that we will lose whatever amount we raise. If it is fifty cents, we will lose enough members to offset that gain; if we raise it two dollars, I know good and well we will lose enough members to offset it, because it is a proposition to raise those dues, and it is a proposition to assess. Why assess when we have money to spend?

This legislative man Stallings said yesterday that if we had had \$250 to send telegrams out to the different societies, we would have gotten enough in there to make Governor Cooper afraid to veto that. Why didn't you spend the \$250? You had it, didn't you? That is why I can't understand it. What are these dues that we have? Haven't we got any right to spend them, or do we have to loan this money out and keep it and hoard it and get it to increase in size, and all that stuff?

I am absolutely opposed to raising the dues or making any assessment until we need the money. As long as we have the money, there is no use in doing that.

DR. MILLER: I think that this a very unfortunate time to bring up this matter, because we want to combine these societies and get a larger membership. There is no question about the fact

dues. Some of them will make it up before the end of the year; some will not.

The dangerous thing, I think, is to let it be known by the Governor, by the legislature, or by anybody else that we have a great big legislative fund, and I don't think we ought to have that.

Dr. Shoulders, we have voted several times authorizing the Board of Trustees to vote funds for this legislative use. That is a much better plan. Then if we run behind, we can make an assessment without a deficit. We should make the assessment only then, and not have a lobbying fund on hand, because I think that would make against us.

DR. BOGART: I am awfully glad that these facts were brought out because I know I felt, and so did Dr. Mitchell when we talked this over yesterday afternoon, that the reason we were opposed was because we felt that we had what funds were necessary. As a member of the Board of Trustees, I know that the fact that Dr. Wood and Dr. Copenhaver have brought out is true, that we do have funds available as we need them, and I feel as Dr. Mitchell said, that if we had exhausted our funds, then that would be the time to levy an assessment.

I think, as has been said here, too, it is a very poor policy to officially create a fund unless it is necessary. If we didn't have money to spend, it would be all right, but we have got enough money to carry on this thing in the next two years. Let's go ahead and use it up, and then if we need an additional fund, put in an assessment for it.

DR. A. B. SHIPLEY (Elizabethton): Mr. Speaker, the main thing is that we need money. It doesn't matter where we get it. We have \$7,000 in mortgages or something. That money should be where the Legislative Committee can get their hands on it.

DR. BOGART: It was.

DR. SHIPLEY: That is where it ought to be. We have got to have money any way you take it. We have to assess it, or we have got to use this \$7,000 we have stored away, but the money should be available where the Legislative Committee can get it when they want it, and get it quickly.

We have got to have money, and I don't see that it makes any difference if the people, or the Governor, or anybody knows it if we do have a big amount of money we want to use. I don't think it is any of their business. We have got it, and we ought to use it. The main thing is that money ought to be ready so that if the gentlemen of the Legislative Committee need it, they can get their hands on it and do it quickly.

DR. ROBERTS: Mr. Speaker, if the amend-

House.

DR. ROBERTS: That is what I am calling for.

THE SPEAKER: Why didn't you just say "Question" then? You don't have to talk about that.

DR. FUQUA: I fall in that category that Dr. Wood said went out of town and couldn't afford it. The day before I came down here, I waited for fifteen patients, and two of them came in.

I feel this way about it: The Lord knows I can't afford it. I couldn't afford to come down here, but I came because the boys up there wanted me to come. I feel that if the question is going to create friction in the House, we certainly don't want friction at this time. I do believe that Dr. Edwards hit the nail squarely on the head when he said we have to fight fire with fire. I am just a little bit steamed up on legislation due to our past experience. We haven't lost our momentum on that point up in our neck of the woods yet, but I believe if it comes to a question of whether we can assess or whether we can raise the dues, why not put this thing before the local societies and ask for donations? There is no doubt about the fact that we need money.

We have a chiropractor who moved into Johnson City recently, and he has a neon sign in his window: "Where the Sick Get Well." He stuck his neck out on the radio after the veto of the Basic Science Bill and praised the illustrious Governor for his attitude. Who was he to judge, of course? We have that situation in our section, and I think you have it everywhere, not only in Tennessee, but in every state of the Union. They have funds—there is no doubt about that. I talked to an attorney in our town not so long ago about moving in on a quack, and in the course of the conversation I said, "We would like to take a crack at this chiropractor up here who is so blatant about curing by chiropody and what not."

He said, "Well, I'm sorry, but I am his attorney. He has retained me on a set fee to protect him."

It looks to me as if we are up against a pretty well organized group, and they are armed to the teeth. They have finances to do it with. I can't afford two dollars probably as well as any other man sitting in the House today, but I will give two dollars—I will give ten dollars, anyway—to help this thing out, because I feel that we younger fellows here are facing a pretty tough proposition. You older gentlemen have passed through a time and have fought your way through, and you have maintained the medical profession to the point where there is pleasure and real pride in being a member of this body; but I might have a boy some day who might want to study medicine, and I would hate like the devil to have him come back



and say, "Pop, what did you let us down for back there and let the chiropractors run us out of the state?" So I feel that if we cannot get the money by assessment or by raising the dues, let us see how much we can get by donations. I think I can guarantee that every man in the Tri-County Society—and I think we are about the fifth group in the state in size—will give not less than two dollars to a man, and I propose, for the sake of avoiding friction (I think we have proved that we need the money), that we make it in the form of a donation, to be set aside to be used by the legislative body as it sees fit. I would like to put that in the form of a motion if that is not out of order.

DR. STANFORD: That is out of order.

THE SPEAKER: Is there any other discussion? If not, we are going to vote on the amendment by Dr. Baird first, that is, that the dues be raised fifty cents. He made that as an amendment to the original motion.

The motion was put to a vote and lost.

THE SPEAKER: We will now vote on the original motion.

DR. STANFORD: There is another amendment, Dr. Roberts' amendment to make it an assessment for one year for two dollars, I believe.

THE SPEAKER: I didn't know he made that as an amendment.

DR. STANFORD: Yes, and I accepted it and asked for a ruling on it.

Was it two years, or one?

DR. ROBERTS: One year.

## TWO-DOLLAR ASSESSMENT PASSED

THE SPEAKER: The amendment is that there be an assessment of two dollars for one year. All in favor say "aye"; opposed "no." Division.

All in favor please stand.

Fifteen arose.

THE SPEAKER: All those opposed please stand.

Thirteen arose.

THE SPEAKER: That is pretty close. It is carried.

As I understand it, the motion is carried that we assess, or whatever you want to call it, each member two dollars for one year.

THE SECRETARY: That is, next year.

THE SPEAKER: Yes, next year. This year is over with.

THE SECRETARY: It is not retroactive to this year.

DR. STANFORD: Mr. Chairman, since that is settled, may I just make a remark? Twice on the floor of this House the question of friction has been brought up about a difference of opinion. There shouldn't ever be any friction about a difference of opinion. Some of the men in the Memphis and Shelby County Society that I love better than any I ever knew in the world are always against me if I rule this contention out and said that

friendly. So I think we ought to vote on anything that comes up without any idea of friction. There is nobody here but us, and we are here working for the profession in the state. Let's don't ever have friction, but have divisions if we want to.

THE SPEAKER: I think your remarks are very timely. We all want this thing, but we just weren't exactly agreed as to what was the best way to produce it.

THE SPEAKER: Is there anything else? This is your last chance.

Dr. Edwards, do you want to talk some now?

## PRESIDENT EDWARDS' ADDRESS

THE PRESIDENT: Mr. Speaker, I feel that I should express my very deep appreciation to this body for the honor they have conferred on me of serving as President during the past year, and I want to say that it has been a real pleasure. It is true there has been work to do, and I have done the best I could. I have devoted a good deal of time to it, but I want to say that it is really and truly an inspiration to go out and contact our profession over the state as I have done during the past year. We have really got the finest profession in the world.

About this matter that has just been passed on here, I feel definitely that you took the right action. I think the amendment proposed to make this money available, as an assessment, and not as dues, is the proper way to do it, because it will not at all cut down your membership. We have all to gain and nothing to lose because all the money that will be collected under this action will be as an assessment, and the dues will remain the same. I have the feeling that the doctors are not going to resent this sort of procedure and action, because they are ready to cooperate and render whatever aid is possible in carrying out the organization that they think should be done.

Someone spoke a minute ago of sending a thousand telegrams to the Governor to prevent this veto of this bill. It is awfully hard to know, under the circumstances and conditions that we are working up there, when those things should be done. For instance, this bill was passed in both houses of the legislature with hardly a dissenting vote. We had no idea that such drastic action was going to be taken by the Governor. We didn't follow him up and keep going to his office to ask him if he was going to veto the bill. We had no idea that such a thing would happen. We did not know it until one hour before, on Saturday afternoon after the legislature had adjourned sine die, when Dr. Stallings called me and told me that he had wind that this action might be taken. Within an hour, Dr. Shoulders and Dr. Shofner were in conference with the Governor. How could you get a thousand telegrams to the Governor under conditions like the expenditures made.

I want to say again that it has been a great pleasure to me and I appreciate very much the honor that you have conferred on me.

There is one matter that I would like to discuss, Mr. Speaker, for just a minute. It has been on my mind for some time even before a year ago when I assumed office in this organization. It has been on our minds for some years. It has been forced on us of course, and we have learned a good deal about it. That is this question of the extension of medical care. That is going to be pushed more and more in the near future, and I think that we should begin to think of some method or manner by which an American system can be set up for controlling this thing, rather than have enforced on us communism or nazism or fascism when it comes to the practice of medicine. I believe the best way to defeat this thing from happening is for the profession to really dive into this thing and to begin to cooperate with the people who are going to try to force some action on it, and we can retain control of the situation so far as the medical practice is concerned.

I think it wouldn't be out of place at all for the Board of Trustees to appoint a special Committee on the study of the extension of medical care. The American Medical Association has appointed a National Committee to do the same thing and I think if a Committee could be appointed to cooperate with the Welfare Department of the state government and these organizations which are going to try to take some action in this matter, the profession can retain control of the thing that is going to cause a great deal of trouble unless the medical profession does do something.

Thank you very much.

THE SPEAKER: I think Dr. Edwards did a magnificent piece of work last year, and I think he is due a vote of thanks for his intense interest and the enormous amount of work that he did during this past year to put over these legislative bills.

DR. MONGER: Mr. Speaker, I move you, sir, that we give him a rising vote of thanks.

DR. STANFORD: I second the motion.

The assembly arose and applauded.

#### PHYSICIANS' NATIONAL COMMITTEE FOR ELECTION

THE SPEAKER: Right along that same line, I have been approached by one or two members who were confused by some literature which was sent out during the last national campaign, under the heading, "Physicians' National Committee for the Election" of a certain one for President. Every Secretary and every contributor to that fund was written a letter and told that there was absolutely no connection between the two societies and that our Association had absolutely nothing at all to do with that political association, which was just a trick to get votes. So disabuse your minds of any idea that there is any connection

between those two things, because ours is a non-political, nonpartisan organization and has absolutely nothing to do with the election of any man on earth except the men that we want in the legislatures to carry out our views on medical matters.

THE SECRETARY: Mr. Speaker, there was one remark by Dr. Edwards which I think we should correct, and that is that the American Medical Association created this National Physicians Committee. It did not. That is just as separate as Wynn Edwards' being President of the State Association and also a bank director. They are just as separate as they can be, organically, politically, and in every other way. Please don't have that confusion in your minds. That is one of the reasons for Mr. Pratt's being here, to try to get a definite opinion as to what this is about fixed in the minds of everybody.

THE SPEAKER: Is there any other business to come before the House?

DR. W. L. SUMMERS (Ridgely): We never voted on this about whether to raise the dues or not. We voted on this gentleman's amendment, whether it was to be one year or two.

DR. STANFORD: The amendment really took the place of the resolution.

THE SPEAKER: The amendment was accepted by the man who made the original motion, you see, so it was attached to the motion and voted on.

DR. SUMMERS: It wasn't put to the House in that way because we voted on the amendment.

DR. STANFORD: To clear matters up, we might vote on the resolution as amended.

DR. SUMMERS: We voted on whether it would be one or two years.

THE SPEAKER: But that amendment was accepted by the maker of the original motion, which made it a part of the motion. The other amendment was not accepted. If you want a vote on anything else, just tell me, and I will put it.

DR. STANFORD: That would be just a matter of form, because that amendment replaces the original motion.

THE SPEAKER: If you want the motion put again, we will put it again. As I understand it now, the motion is to assess each member two dollars for one year as a separate and distinct assessment from his dues—not to raise the dues, but to assess two dollars each for one year, beginning in 1942, for one year.

DR. ROBERTS: Mr. Speaker, when this amendment was accepted by the principal maker, it certainly made it a part of the original motion, and my contention with you, Mr. Speaker, is that that motion has been passed.

DR. STANFORD: Let's have a ruling from the Chair.

THE SPEAKER: I rule that it has been passed.

DR. WOOD: Does that make it compulsory to pay that two dollars as an assessment?

THE SPEAKER: Yes.



DR. STANFORD: For one year.

DR. WOOD: If they don't pay the extra two dollars, they don't get the JOURNAL.

DR. BAIRD: If they are not satisfied with it, I move that we reconsider it and have another vote on it.

DR. COPENHAVER: As I see it, the only thing they can do, Mr. Speaker, is to appeal from your decision if they want to vote on it.

THE SPEAKER: I am perfectly willing to do that. I want to please everybody.

DR. COPENHAVER: Everybody knows that.

THE SPEAKER: What is the wish of the House? I think that motion has been settled.

DR. COPENHAVER: Somebody can make a motion to appeal from the Chair.

THE SPEAKER: I think the motion to assess everybody two dollars for one year has been settled. If there is any fault in the placing of the motion or what not, let's have it right now, and no hard feelings.

DR. ROBERTS: Mr. Speaker, I think we are through and I make the motion to adjourn.

DR. LANCASTER: I second the motion.

The motion was put to a vote and carried and the meeting adjourned at 10:45 o'clock A.M.

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therefore not liable. The court very properly ruled this contention out and said that

cies have yielded results commensurate with the expenditures made.

H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1941

**THE ISSUE  
SHALL PATIENTS AND DOC-  
TORS RETAIN THEIR FREEDOM  
OF JUDGMENT IN THE MATTER  
OF MEDICAL CARE, OR SHALL  
THIS FREEDOM BE SURREN-  
DERED TO SOME GOVERN-  
MENTAL AGENCY?**

**EDITORIAL**

**SOCIALIZED MEDICINE**

The term "socialized medicine" is used entirely too loosely. It is used by intention and by accident to convey a false meaning. The idea is conveyed that some modern socially-minded people are sponsoring and leading a movement to socialize medicine. As a matter of fact, medicine has been socialized already by doctors themselves. Very early in the organization of the medical profession doctors took action to socialize medicine and these steps have been supplemented from time to time to make medicine more and more socialized. First, action was taken to declare that the practice of medicine is a profession and not a business. That service to humanity is its primary object and monetary considerations are secondary. They declared in favor of fees in proportion to the ability of the patient to pay and not in direct proportion to services rendered. They declared for a lib-

reaping a profit from a new invention or discovery of benefit to sick people. They took action and promoted movements for the promotion of the public health. All these actions were taken by a socially-minded profession and, what is more, they have been lived up to by the practitioners of medicine to an overwhelming extent.

The thing that is often referred to as socialized medicine is, in reality, communistic medicine. It is a system of practice in which the state is the boss. The state employs the doctors and pays them. The state directs the patient where to go and what to do. The state owns the equipment and facilities. Such a system is not socialized medicine. It is, in fact and in theory, communistic medicine.

We doctors are guilty of using these terms loosely. It is for this reason that some of our campaigns aimed at the education of the public as to the meaning of all that is going on ends in a state of confusion in the mind of the public and therefore a confused attitude.

We doctors are not fighting against the proper socialization of medicine. We sponsored and created it. We are fighting against the *communization* of medicine. We are fighting for democracy in medicine. We are fighting for a system of practice in which the individual patient is free to select his doctor and his hospital; free to do as he likes, so long as others are not endangered. We are fighting for a system in which the doctor is free to exercise his judgment with the consent and approval of his patient. A system in which the doctor is the employee of the patient and not the employee of the state. A system in which a code of high ethical principles operates to preserve these freedoms and these arts and these skills and these judgments. This is the reason for the statement on the editorial page of the JOURNAL. It is a brief definition of the issue. The issue is "shall patients and doctors retain their freedom of judgment in the matter of medical care, or shall this freedom be surrendered to some governmental agency?"



It is necessary to revert to this subject at intervals for the reason that the same agencies that have tried to communize medicine in the United States under the guise of socializing it may attempt to use the present emergency as a basis for further steps in this direction. They must all be watched just as carefully as if an emergency did not exist, or even more carefully. Nothing would be more tragic than for us to join in the effort and sacrifice to preserve the principles of democracy as a way of life, *as we are doing*, and then lose it by movements from within promoted in the name of social welfare.

#### LIABILITY UNDER A HOSPITAL SERVICE PLAN

The American Hospital Association has sponsored hospitalization service plans. Many of the hospitalization plans in operation in the United States deserve the commendation and the approval of the medical profession and the support of the public.

It should be restated at frequent intervals that a hospital service contract should provide that the benefit be paid to the policyholder or the hospital, in cash, and that the contract *not embrace* a medical care provision.

Hospital care and medical care are two different propositions. The two are not in conflict with each other. The two should collaborate with each other. When one undertakes to dominate the other, trouble results.

A decision rendered by the Supreme Court of Oregon brings out clearly the point. It appears that a hospital contract was sold by a corporation. The contract contained a medical benefit provision. The doctors who rendered the medical services to policyholders under the contract were employees of and paid by the corporation (hospital service organization).

A charge of malpractice was brought against the doctors and the corporation by some patients and damages sued for. The corporation offered as its defense that the implied contract which usually exists between a doctor and his patient existed in this instance and that the corporation was therefore not liable. The court very properly ruled this contention out and said that

the doctors were the agents of the corporation and that the corporation was liable for any damages resulting from the malpractice.

This decision may have a salutary effect on some enthusiastic hospital superintendents who wish to tack a medical benefit on a hospital service plan and thus make it more attractive to prospective purchasers.

Insurance companies who sell a hospital benefit are not liable for the malpractice of a doctor because the patient employs his own doctor and there is an implied contract between the patient and his doctor and none between the doctor and the corporation. The insurance company pays the benefit to the insured who in turn pays his doctor and hospital. This is the form of contract which keeps responsibilities where they belong. It also keeps down trouble.

#### WE RAISE A QUESTION

The attempt has been made to propagandize the public with the idea that the democratic system of medical care is very defective and that something radical should be done about it by the state and national governments.

Statistical data as to the rejections of draftees for military service are given as a reason.

It might be worth while to inject this one thought into the question at this time. During the more than twenty years that have intervened since World War No. 1 there has been a very great increase in the amount of medical care rendered by various branches of government in the United States.

Appropriations for health and medical care activities by federal, state, county, and municipal governments have been multiplied many times over again. These agencies and activities have entered into the field of infant care, maternity care, school health, public health, tuberculosis, crippled children—in fact, every branch of medical care has been touched by appropriations and by agencies.

It is appropriate to raise the question as to whether all these expenditures and agencies have yielded results commensurate with the expenditures made.

Certainly if there is a higher rate of rejection for military service now than was the case in 1917 and 1918, due to neglect on the part of all medical care agencies, both public and private, these public agencies must share very largely in the blame. They certainly have had a chance to show merit.

So, the effort to hold the medical profession and the democratic system of medicine as blamable for defects that exist is wholly unwarranted. The facts would seem to place a larger share of the blame, if any is justifiable, on the public agencies. They have failed to bring the results their sponsors promised.

#### HEALTH PROGRAM OF THE NATIONAL YOUTH ADMINISTRATION

By John M. Lee, M.D., State Health Director

The nation-wide health program of the National Youth Administration for youths, aged seventeen to twenty-five years, enrolled in the out-of-school work program, is now being organized by the N.Y.A. for Tennessee. The essential features of the program include: (1) a complete physical examination of youth enrolled in the N.Y.A. out-of-school work program; (2) reference of all youth found with physical defect to a physician or dentist of their own choice; (3) assignment of youth to work suitable to their physical status; (4) health education; (5) promotion of hygiene and sanitation at all N.Y.A. work projects.

The program is sponsored nationally by the United States Public Health Service, and from this service Dr. Carl E. Rice has been assigned to act as National Health Director and will formulate the policies of the undertaking.

The Trustees and the House of Delegates of the Tennessee State Medical Association have approved the program as presented. The State Administrator of N.Y.A. for Tennessee has appointed the following to act as a medical advisory committee for the state program: Dr. H. H. Shoulders, Chairman; Dr. C. M. Hamilton, Dr. L. W. Edwards, Dr. John M. Lee, and Dr. W. Carter Williams. To organize and direct the program in Tennessee, Dr. John M. Lee has

been appointed State Health Director on a part-time basis.

To secure examinations of the youth in this program, examining physicians and dentists will be appointed in each county in the state. For this service the administration will pay for office examinations at the rate of \$3.00 per hour.

One of the objectives of this work is to secure accurate information as to the health status of this age group in the United States. It will naturally follow that many found with physical disability will seek corrective measures, thus contributing to improve health conditions in the nation.

## DEATHS

DR. E. C. MASON

Dr. E. C. Mason, Quebeck; University of Nashville, Medical Department, 1908; aged seventy-two; died July 17, 1941.

DR. EARL GOYER

Dr. Earl Goyer, Jackson; Memphis Hospital Medical College, 1912; aged fifty-five; died June 16, 1941.

DR. FRANK J. RUNYON

Dr. Frank J. Runyon, Clarksville; University of Louisville, School of Medicine, 1884; aged seventy-nine; died August 6, 1941.

## RESOLUTIONS

DR. E. C. MASON

*Whereas*, the Supreme Physician has seen fit to remove from our midst our brother physician and good friend, Dr. E. C. Mason of Quebeck, Tennessee, we, the members of the Five-County Medical Society, resolve:

*That*, the death of Dr. Mason represents the loss to our society of a Christian gentleman and a man who upheld the standards of medicine and society. Dr. Mason went quietly about relieving the poor, the rich, the high and the low, confident that a just reward awaited him beyond the skies.



With appreciation of our irreparable loss, we have today ordered a copy of these resolutions spread upon our minutes, a copy sent to THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION, and a copy sent to the family of Dr. Mason.

(Signed)

C. B. ROBERTS, M.D.,

V. O. BUTTRAM, M.D.,

B. L. UPCHURCH, M.D.,

*Committee for the Five-County Medical Society, White, Putnam, Overton, Jackson, and Cumberland Counties, Tenn.*

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#### DR. R. R. ROACH

It is with deep sorrow and regret that we note the passing of Ruben Rogers Roach, M.D., of New Market, Tennessee. Dr. Roach was sixty-five years old. He was a graduate of Tennessee Medical College in 1902, located in Knoxville, Tennessee. In 1914 he took a postgraduate course at the University of Louisville in Louisville, Kentucky. The major part of his practice was confined to Grainger County, Tennessee, until 1920, when he removed to New Market, Tennessee.

He was a member of the Hamblen County and Tennessee State Medical Societies. He was a devout and consistent member of the Baptist Church, always mindful of the desires and needs of his patients and patrons. His death will not only be deeply felt by the family but also his personal contact missed by his fellow practitioners.

It is the desire of the committee that a copy of the above be recorded in the minutes of the Hamblen County Medical Society, also copies mailed to the family and the State Medical Society.

Respectfully submitted by

DR. W. E. HOWELL,

DR. Y. ALVIN JACKSON,

*Members of Resolution Committee.*

### NEWS NOTES AND COMMENTS

#### CHANGES OF ADDRESS

Dr. R. B. Chrisman, Memphis, to Station Hospital, Camp Forrest, Tennessee.

Dr. S. L. Stephenson, Jr., Savannah, to

Box 11, Station Hospital, Fort Jackson, South Carolina.

Dr. W. D. Anderson, Memphis, to 5 Pinehurst, Tuscaloosa, Ala.

Dr. A. T. Hicks, Bruceton, to Camden, Tenn.

Dr. S. S. Brown, Jellico, to Pleasant View, Kentucky.

Dr. Chas. J. Deere, Memphis, to Fort McPherson, Atlanta, Ga.

Dr. Harry W. Hollingsworth, Jonesboro, to Leona Mines, Virginia.

Dr. R. D. Henderson, Memphis, to Maywood, Olive Branch, Miss.

Dr. J. E. Nelson, 525 McCallie Avenue, Chattanooga, to 3112 Brainerd Road, Chattanooga.

Dr. J. W. Handly, Bennie-Dillon Building, Nashville, to No. 2 Polk Apartment, Nashville.

Dr. L. A. Wilcox, Memphis, to Turner Clinic, Piggott, Ark.

Dr. Harry D. Jones, Vanderbilt Hospital, to Fitzsimmons General Hospital, U. S. Army, Denver, Colo.

Dr. Wiley D. Lewis, Boston, Mass., to St. Albans Sanatorium, Radford, Virginia.

Dr. Howard King and Dr. C. M. Hamilton announce the association of Dr. Robert N. Buchanan, Jr. Office at 328 Doctors Building, Nashville.

Doctor Buchanan's practice is limited to dermatology and syphilology.

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#### UNITED CHINA RELIEF

Eight organizations have joined their efforts to serve China through the United China Relief with a view of being of assistance as the United States is now preparing to give "all out" medical aid to China.

Dr. Co Tui will serve as medical adviser to the commission which is in charge of all purchases for the Chinese government under the terms of the seven billion dollar lend-lease program. He will also advise and help coordinate medical purchases for China made by the American Red Cross and United China Relief, now conducting a coordinated national campaign for \$5,000,000 to provide relief to China.

President Roosevelt has established a

China Medical Supplies Commission to handle all Chinese government purchases and to establish priorities of Chinese needs.

The American Bureau for Medical Aid to China has undertaken to supply all personnel needs, to recruit Chinese doctors living abroad for service in the Chinese Medical Corps, to equip and support the special emergency training centers in China for medical aides, and to aid the Chinese National Health Administration in its anti-epidemic control plan.

The Medical Bureau, with Dr. Walter B. Cannon as chairman, has now opened a special department at 1790 Broadway, New York, where American doctors and nurses can apply for service in China.

Surgeons, doctors, nurses, pharmacists, ambulance drivers, and medical assistants are eligible for serving in the American relief corps to China, and one American-British-Canadian ambulance corps of fifty members has already left for service in China, financed by the American Friends Service Committee, coordinating its China work with United China Relief.

At a recent meeting of the American Bureau of Medical Aid to China \$228,721.00 was voted for immediate purchase of supplies to be shipped at once. These supplies included drugs and vaccines, hospital support, and funds for rehabilitation of disabled and crippled soldiers and civilians in war-torn areas.

#### MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY\*

Robert Eugene Schell, Nashville.

#### *Orders Revoked*

Robert Cooke Kimbrough, Madisonville.

#### NATIONAL GUARD MEDICAL OFFICERS FROM TENNESSEE ON ACTIVE DUTY\*

Joseph W. Fenn, Major, Nashville, State Staff.

Raymond D. Henderson, Major, Memphis, 115th Field Artillery.

Robert C. Patterson, Jr., 1st Lieut., Nash-

ville, 105th Observation Squadron, Fort Jackson, S. C.

Moore J. Smith, Jr., Captain, Chattanooga, 181st Field Artillery, Camp Forrest, Tenn.

WITH NATIONAL GUARD TROOPS†  
Medical Detachment, 117th Infantry, Fort Jackson, South Carolina:

Major John R. Thompson  
Captain Thomas J. Dowling  
Captain Robert S. Hellman  
Captain Alva R. Taylor

Medical Detachment, 115th Field Artillery, Fort Jackson, South Carolina:

Captain Ellis J. Huey  
First Lieutenant Joseph M. Battle

Medical Detachment, 181st Field Artillery, Camp Forrest, Tennessee:

Major Frank F. Harris  
Captain James R. Fancher  
Captain Millard B. Moore  
Captain Moore Jackson Smith  
First Lieutenant Claude A. Clements

Medical Detachment, 191st Field Artillery, Camp Forrest, Tennessee:

Major A. J. Sutherland  
Captain Paul B. Hahn  
Captain John A. Culbertson  
First Lieutenant James P. Leathers  
First Lieutenant Charles R. Yancey

†Based on information furnished us by Adjutant General T. A. Frazier, Nashville.

## MEDICAL SOCIETIES

### *Davidson County:*

Papers scheduled to be read:

September 2: "Carcinoma of Colon," by Dr. Henry Carney. Discussion by Dr. D. W. Smith.

"Obstructive Uropathies in Children," by Dr. Burnett Wright. Discussion by Dr. John Lee.

September 9: "Carcinoma of the Rectum," by Dr. L. W. Edwards. Discussion by Dr. W. C. Dixon.

September 16: "Terminal Ileitis," by Dr. C. C. Trabue. Discussion by Dr. Murray B. Davis.

Special plans are being made for a dinner

\*Based on information published in *Journal of the American Medical Association*.



State Medical Association, and so forth, guest speaker. Full details of this meeting will be published in the September JOURNAL.

#### *Giles County:*

The members of the Giles County Medical Society have been attending the lectures on internal medicine for the past ten weeks and as a result the society has not held any regular meeting since May other than business meetings. We will have our next regular meeting on July 31, and will get back in the harness again. We have fourteen active members and have some good programs.

On August 28, the Tennessee Department of Public Health, Division of Vital Statistics, will have charge of the program.

(Signed) T. F. BOOTH, M.D., *Secretary*.

#### *Hamilton County:*

On August 7, Dr. Robert C. Robertson read a paper on "Principles of Fracture Treatment."

Papers scheduled to be read in September are as follows:

September 4: "Fibromas of the Ovary," by Dr. Cecil E. Newell.

September 11: "Discussion of Headaches," by Dr. D. Isbell. "Urology in Children," by Dr. Joe B. Killebrew.

September 18: "Syphilis Control," by Dr. W. C. Sanford.

September 25: "Practical Application of Anterior Lobe Pituitary Factors," by Dr. Fay B. Murphey.

"Prevention of Heart Disease," by Dr. P. R. Hysinger.

#### *Robertson County:*

The Robertson County Medical Society met June 17 as the guest of Dr. W. W. Porter at his home. Those present were Drs. Rude, Stone, Kempf, Elder, Hawkins, Dye, Porter, Moore, Matthews, Connell, and Freeman. Visitors were Drs. Duncan Eve, H. H. Shoulders, Smith, Bennett, and Anderson from Nashville; Dr. Sam Fentress of Goodlettsville; Dr. B. B. Sory, Palm Beach, Fla.; Dr. Henry Vomacka, Adairville, Ky.; and Dr. John R. Glover of Springfield.

being "The Zoning of Societies." Following this, Dr. Duncan Eve discussed "The Management of Fractures in General." Dr. Daugh Smith was in turn introduced and used as his subject, "Pruitis Ani." Each speaker gave interesting discussions on the subjects. Dr. Rude made a motion that the secretary write to the secretaries of the other counties to arrange a joint meeting of the societies to express their views as to organizing the counties of Robertson, Montgomery, Sumner, Cheatham, and Houston.

There was a rising vote of thanks to Dr. Porter for his generous hospitality. The meeting adjourned to meet at the County Hospital July 15.

(Signed) JOHN S. FREEMAN, M.D.,  
*Secretary*.

#### *Shelby County:*

The Shelby County Medical Society met August 5. Papers read were as follows:

"Gonorrheal Myelitis," by Dr. C. C. Turner. Discussion by Dr. Nicholas Gotten and Dr. H. K. Turley.

"Serial Pyelography with Special Reference to Certain Conditions," by Dr. T. D. Moore. Discussion by Dr. J. L. Shaw and Dr. H. D. Gray.

Case Reports: "Cholecystitis with Septicemia," by Dr. J. D. Biles.

"Auricular Fibrillation Associated with Avitaminosis," by Dr. D. W. Walker.

#### *Washington-Carter-Unicoi Counties:*

The regular monthly meeting of the Washington, Carter, and Unicoi County Medical Society was held on June 5, at 7:00 P.M., at Rock Creek Park near Erwin. The meeting was a picnic affair with the physicians of Unicoi County acting as hosts. A delicious picnic supper was served to thirty-eight members and guests.

Dr. Glenn D. Grubb of Knoxville was guest of the society and read an interesting paper on the subject, "Pollen Allergy." The paper was discussed by Dr. Wofford of Johnson City.

(Signed) H. B. CUPP, M.D., *Secretary*.

## OTHER MEDICAL SOCIETIES

The Tennessee Section of the Southeastern Surgical Congress will have its annual one-day session at Paris, Tuesday, October seventh.

The programs will be mailed out in due time. The Henry County Medical Society is making elaborate plans for the meeting.

Tennessee Valley Postgraduate Medical Assembly will not meet this fall because so many doctors are connected directly or indirectly with the National Defense Program. The next meeting will be announced at a future date.

The twentieth annual scientific and clinical session of the American Congress of physical therapy will be held September 1 to 5, inclusive, 1941, at the Mayflower, Washington, D. C.

For information concerning the seminar and preliminary program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

At the same time the twenty-fifth annual meeting of the American Occupational Therapy Association will be held at the Mayflower. A combined meeting will be held on Wednesday, September 3, 1941. For information concerning the Occupational Therapy Association meeting, address Mrs. Meta R. Cobb, 175 Fifth Avenue, New York City.

West Tennessee Medical and Surgical Association has elected Dr. V. E. Massey, Huntingdon, president; Dr. A. T. Hicks, Camden, and Dr. C. E. Bolen, Wildersville, vice-presidents; Dr. George McSwain, Paris, secretary, reelected; and Dr. John Jackson, Dyer, assistant secretary.

Middle Tennessee Medical Society has elected Dr. T. C. Rice, Franklin, president; Dr. V. H. Griffin, Clarksville, vice-president; and Dr. R. A. Daniel, Jr., Nashville, secretary.

The American Neisserian Medical Society announces an annual prize of one hundred dollars to be known as the P. S. Pelouze Award to be presented to the person under thirty-five years of age who, in the opinion of the Committee of Awards, has made the outstanding contribution to the control of the gonococcal infections during the preceding year.

Nominations for the award should be sent to the secretary not later than March 31 of each year. The winner will be announced at the subsequent annual meeting of the society.

## MEETING OF THE SOUTHERN MEDICAL ASSOCIATION

### *Announcing Change in Days of Meeting*

The Southern Medical Association meeting will be held in St. Louis on Monday afternoon, Tuesday, Wednesday, and Thursday, November 10, 11, 12, 13, instead of Tuesday, Wednesday, Thursday, and Friday forenoon, November 11, 12, 13, 14, as previously announced.

The association will open at noon on Monday, the registration beginning at that time, the scientific programs beginning at 2:00 P.M.

The general session, open to the public, will be held on Monday evening.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Spinal Anesthesia and Injury to the Nervous Mechanism of Micturition. Charles Rieser, M.D. The Journal of the A. M. A., July 12, 1941.

The author states that postanesthetic retention of the urine following spinal anesthesia may be due to nerve injury of the spinal cord, and if the disorder persists, transurethral resection of a portion of the internal sphincter may overcome this unfortunate complication.

The author reports a case of this character occurring in a man, age twenty-six, following an appendectomy under spinal anesthesia, which had persisted for three months. It was found that it was due to an injury to the sacral portion of the spinal cord where the parasympathetic nerves



take origin, which resulted in spastic contracture of the internal sphincter and loss in tone and expelling force of the detrusor muscle.

This condition was cured by resection of the internal sphincter. Six bites of tissue were taken from the posterior and posterolateral aspects.

## FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

### The Value of Artificial Fever Therapy in Sulfanilamide Resistant Gonorrhea.

The introduction of sulfanilamide as a successful chemotherapeutic agent in gonococcal infection has necessitated a re-evaluation of the place of artificial fever in the treatment of this disease. One of us (C. A. O.) in 1936 reported a group of 100 cases of gonorrhea treated by artificial fever. He concluded that prompt and dramatic relief of gonorrheal arthritis and epididymitis could be promised in every instance and that eighty-one per cent of patients with all types of gonorrhea could be cured by an average of four to six treatments, each of six hours' duration at 106-107 degrees Fahrenheit.

The present status of treatment of gonorrhea with reference to sulfanilamide and artificial fever, therefore, appears to be as follows:

1. In view of the glowing reports in the literature, every case of gonorrhea should first be given sulfanilamide alone, using adequate dosage with all the accepted precautions against intoxication.

2. If this fails, there are several alternatives: (a) fever alone, a single ten-hour session at 106-107 degrees Fahrenheit will cure eighty to ninety per cent of these sulfanilamide resistant cases, (b) a combination of sulfanilamide in adequate dosage with a ten-hour fever session at 106-107 degrees Fahrenheit may be tried and will probably cure close to 100 per cent of cases, (c) probably in the near future, a scheme of treatment will be worked out that will include preliminary adequate sulfanilamide medication followed by a somewhat less prolonged fever session than the usual ten hours at 106-107 degrees Fahrenheit.

3. Up to date, it is still our belief that artificial fever therapy is the treatment of choice for gonorrheal complications.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

### Problem of Diabetic Retinitis. Herman Elwyn. American Journal of Ophthalmology, July, 1941.

The author states that diabetic retinitis cannot be explained on the basis of retinal arteriosclerosis or chronic hypertension, even when these conditions coexist. The retinal hemorrhages and exudates

are thought to be a result of local circulatory disturbances in the retina. The author suggests that diabetes mellitus belongs to a group of diseases characterized by the loss of stability of the mechanism for the maintenance of a physiologic norm. In this disease prestasis is brought about by the failure of the mechanism to maintain the blood-sugar level. All the secondary metabolic changes are due to the consequent loss of sugar with its attendant loss of glycogen reserve in the liver. The persistently increased sugar level in the blood affects the terminal vessel units and in an unknown manner causes dilatation and consequent slowing of the blood flow which constitutes the condition of prestasis. When prestasis exists for a given length of time, the corresponding part of the retina receives an insufficient food and oxygen supply, hemorrhages into the retina result, and eventually hyalin and lipoids are deposited.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

### The Value of Calcium in Labor and in Uterine Inertia. George D. Patton, M.D., and Robert D. Mussey, M.D., Rochester, Minn. American Journal of Obstetrics and Gynecology, pp. 948-959, June, 1941.

Investigation of the effects of the intravenous administration of calcium salts in labor was undertaken for two reasons: first, the author questioned whether calcium might relieve the pain of uterine contractions, and second, the author wished to determine the effect of calcium on the contractability of the human uterus during labor. The basis for the speculation that calcium might relieve the pains of labor was the relief of pain that had been obtained by means of this treatment in lead colic, gallstone colic, acute epididymitis, acute salpingitis, and certain malignant conditions. Muscle cramps which occur during pregnancy commonly yield readily to calcium administered orally. The twenty-six pregnant women who were observed in this study were on a private and semi-private obstetric service. They were at or near term and were either in labor or were undergoing attempted induction of labor. Calcium gluconate was used exclusively in this work.

The observations follow:

1. The administration of calcium will not relieve pains.

2. The administration of calcium will increase the intensity of uterine contractions and will decrease the interval between contractions but will not increase the duration of contractions. It is most useful in stimulation of the uterus in cases of inertia in the first or second stage of labor, but it cannot be expected to overcome severe dystocia.

3. The administration of analgesic agents, such as pentobarbital sodium and paraldehyde, may

defeat the purpose of calcium in some cases of uterine inertia.

4. The administration of calcium apparently has no ill effects on newborn babies whose mothers received calcium intravenously during labor.

5. On the basis of reports in the literature, it would appear that calcium should not be administered if a drug of the digitalis group already has been administered.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

Abnormalities of the Small Intestine in Nutritional Disturbances: Some Observations on Their Physiologic Basis. R. Golden. *Radiology*, Vol. 36, No. 3, p. 262, March, 1941.

Deficiency states causing small intestine changes may be classed as: (1) Primary, as celiac disease and nontropical sprue and possibly cases where a deficient diet has been taken over a considerable period of time. (2) Secondary, where some disease of the gastrointestinal tract may interfere with digestion or absorption of the nutriment, such as peptic ulcer, carcinoma, primary disease of the small intestine, notably tuberculosis or regional enteritis. Primary diseases of the mesentery such as sclerosing inflammation of the lymphatic or lymphoblastoma or biliary tract disease.

The anatomy of the small intestine and the pathology of the small intestine in the deficiency states are reviewed.

### CLINICAL MANIFESTATIONS OF DEFICIENCY STATES

Primary deficiency states as sprue and the celiac disease group are usually associated at times during the course of the disease with diarrhea, with variable abdominal distress and sometimes with an excess of fat in the stools and rapid loss of weight. In other cases, the symptoms may be less characteristic and may suggest some other abdominal condition, as peptic ulcer.

The symptoms of a secondary deficiency state may be obscured by those of the primary condition, such as chronic peptic ulcer with gastric retention, regional enteritis, or ulcerative colitis, or the symptoms of the deficiency state may be the only manifestation of the primary condition; that is, a lymphosarcoma of the small intestine or sclerosing mesenteritis.

Deficiency states may be associated with (1) hypocalcemia, (2) hypoproteinemia, (3) hyperchromic anemia. In many cases, however, none of them is present.

### ROENTGEN MANIFESTATIONS

The abnormalities of form and movement found on X-ray examination of the small intestine in deficiency states appear to be different in different stages of the disease, and even in the advanced cases they are variable. They may be conveniently assembled in three groups.

### 1. Motility

- (a) Hypermotility, apparently in the earlier stages (Weller, Crandall, Chesley, Hansen, and Dunbar).
- (b) Hypertonicity, usually in the earlier stages.
- (c) Hypomotility, in the advanced stages.
- (d) Dilatation, particularly in the jejunum, in advanced cases.
- (e) Abnormal segmentation, that is, elongated areas of contraction, suggesting spasm, between which the lumen may be normal in caliber or larger. The contractions may be so marked that no barium remains in the contracted areas, giving the effect of scattered separated boluses.

### 2. Mucous Membrane

- (a) Coarsening of the mucosal folds, particularly in the duodenum and jejunum, meaning that they are wider, lower, and farther apart and, therefore, fewer in number.
- (b) Obliteration of the mucosal folds in the advanced cases, producing a smooth wall.

### 3. Flocculation of the Barium Shadow

This is a coarsely granular appearance, as if the aqueous suspension of barium sulphate were coarsely emulsified with some nonmiscible fluid; it seems more likely to be present in the advanced cases.

The effect of treatment on the X-ray finding is discussed, and it is pointed out that when the condition has continued over considerable periods of time, the mucosal folds may not return to normal. Four cases are reported in detail and the experimental literature is reviewed together with a discussion of the possible physiological mechanisms involved.

### SUMMARY

Certain nutritional deficiency states, in both early and late stages, are associated with disturbances in the motility and mucosal pattern of the small intestine recognizable by roentgen examination. When no obvious anatomical reason for their existence is apparent, they may be classified as primary; when they are associated with some organic disease of the gastrointestinal tract, mesentery, liver, or pancreas, they may be described as secondary.

Pathologic changes in the intestinal wall occur as a result of long continued nutritional deficiency, but seem to vary markedly in different individuals. There is strong evidence of damage to the intramural nervous system. The earlier changes are undoubtedly reversible, but if the condition persists long enough the intestine may be permanently damaged. Under adequate treatment the middle region of the small intestine does not seem to be restored to normal as rapidly as the proximal region; the former may show persistent evidence of damage after the latter appears normal and after the patient is clinically well.

The clinical manifestations, like the pathologic changes, are variable. The symptoms are often



obscure or misleading. They may complicate a condition requiring surgical treatment.

Associated with the objective changes in the intestinal pattern, disturbances in the physiology of absorption occur which suggest that the small intestine may be part of a vicious circle, for the interruption of which parenteral treatment may be necessary.

Objective changes in the small-intestine pattern, similar to those occurring with vitamin deficiency, have been associated with clinical and experimental hypoproteinemia and several other conditions.

Exactly the same type of intestinal pattern as that found with well-advanced deficiency states is present in normal newborn infants, which after three or four months is replaced by the usual adult pattern; this change is probably due to the evolution of the incompletely developed nervous control of the intestine.

It would seem that some common mechanism must operate in the production of these phenomena from so many different causes. One possible, if not the most probable, mechanism is interference with or damage to the intramural nervous system of the intestine.

Although a positive differential diagnosis cannot be made, the detection of these abnormalities of the small intestine on roentgen examination will serve to draw attention to the possibility of a nutritional deficiency and may lead to its correction before serious damage is done.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
1400 Monroe Avenue, Memphis

The Management of Gastric or Duodenal Hemorrhage. Frank H. Lahey, M.D. Surgery Clinics of North America, June, 1941.

Varying mortality rates of from two to twelve per cent express the seriousness of hemorrhage from peptic ulcer. Mortality figures are much higher in patients over fifty years of age with bleeding from peptic ulcer. In the Lahey Clinic five per cent of patients who have bled while in the hospital have died in spite of any treatment.

Most hemorrhages from gastric ulcer come from lesions on the lesser curvature. Practically all bleeding duodenal ulcers are found on the posterior wall where erosion into the pancreaticoduodenal artery or one of its branches has occurred. These posterior wall ulcers tend to be chronic, intractable, and advancing. An analogy is drawn between these lesions and chronic varicose ulcers of the leg. As the ulcer erodes through the muscularis of the duodenum it becomes surrounded by scar tissue producing venous stasis, lymph stasis, and infiltration. Bleeding occurring in a patient under good medical management is an indication of the intractability of the ulcer.

There are two distinct types of bleeding from gastric and duodenal ulcers. In the first there is a single hemorrhage which stops after the fall in blood pressure or recurs only once again. There is another type in which massive hemorrhages repeatedly occur. The latter is of course more serious and occurs in older patients in whom arteriosclerosis is present which makes spontaneous cessation less likely due to the rigid character of the vessel wall. It is also seen where a large vessel has been eroded.

The decision as to the type of treatment to carry out in cases of bleeding peptic ulcer is a most difficult one to make. The author's stand is that "if hemorrhage has occurred more than three times in thirty-six hours or less" operation should be seriously considered. Although the period of bleeding is the most undesirable time to operate upon a patient, in some cases it becomes necessary. Everyone agrees that if the decision to operate is made, it should be done in the first forty-eight hours. No fixed rules can be stated as to which patients should be subjected to surgery, but rather the decision is based on surgical experience and judgment.

Operative procedures for this condition consist of either exposure of the ulcer and the application of transfixion ligatures of silk in two directions in order to include the bleeding vessel, or subtotal gastrectomy which the author prefers. This latter procedure removes a large portion of the stomach and also the part of the duodenum containing the ulcer and the bleeding vessel. Continuous spinal anesthesia is recommended for this type of gastric emergency since small amounts of novocain may be given repeatedly without seriously affecting the blood pressure.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

A Review of 500 Gynecological Patients with Urinary Symptoms. Samuel Hochman, M.D. American Journal of Surgery, June, 1941.

The proximity of the generative and urinary tracts in the female often results in erroneous diagnosis.

At Harlem Hospital a cystoscopic clinic was organized to study this group of patients. In about ninety per cent of these cases the pathology was found around the bladder neck.

Urethral strictures were a common finding. Edema of the bladder neck resulting in the finding of polypoid masses or papillary folds was often encountered. Bar formation first described by Mercier was not an infrequent cause of bladder symptoms. Trigonitis was not an unusual finding.

As to etiology, he thinks circulatory, neurological, and psychic factors are to be considered. He

thinks direct extension from the cervix to the base of the bladder is a common finding.

Differential diagnosis should be made by cystoscope.

The average age in this group was 35.6 years. Fifty-eight per cent were between twenty to forty years old. Eighteen per cent had had gynecological operations without relief. Of the 467 cystoscopies done, less than five per cent revealed any major urological condition.

He stresses the definite good from urethral dilatations in the treatment of vesicourethral pathology.

This work from the abstractor's point of view has thrown no light on the subject of gynecological-urological patients.

## BOOK REVIEW

Dr. Frank Walker and Carolina Randolph, working with the Commonwealth Fund through the Tennessee Health Department, with the aid of Commissioner Williams, have compiled a 176-page book entitled "School Health Services." This is a study of 56,160 school records for the children six to sixteen years in six counties throughout the state over a seven-year period.

The six counties included are Gibson, Hardeman, Sullivan, and the three Middle Tennessee counties of Rutherford, Williamson, and Lincoln. Sullivan, the only county in East Tennessee used, provided the largest number of school records, 15,849. The three counties in Middle Tennessee contributed 21,603 records to the study, and in West Tennessee Gibson and Hardeman contributed 18,708 records.

The plan of study continued from 1930 through 1936 under the direction of a field staff who lived in the county during the time they were working on the records of that particular area. The field staff was composed of a director, a public health nurse, and a clerk part of the time.

It is pointed out that a large part of the study was directed to the consideration of medical findings at examination, the defects corrected, the effect of the presence of a parent at the examination, and the effect of medical and nursing supervision before school entrance. This program provided for the examination of children on entrance to school and every other year thereafter. The study revealed that 28.3 of the children had had preschool supervision. Tables are presented showing a definite increase in interest of parents being present for the examinations. 10.6 per cent of parents were present in 1930; 24.2 per cent of parents were present in 1936.

"School Health Services" emphasizes the importance of the presence of parent at examination, the Blue Ribbon Program, Systematic Preschool Supervision, the Control of Communicable Disease, Repeated School Examination, and Nursing Visits. The dental, visual, tonsil, nutrition, heart, and lung findings of this school group are presented along with tables and charts. The 1930 findings are compared with those of 1936. A significant drop in the incidence of dental, throat, and nutrition defects among six-year-olds was noted. The health status of twelve-year-old children showed improvement during this period. The book concludes with the recommendation that the school health program should be one of communicable disease control, health promotion, and health education.—FRAZIER BINNS, M.D.



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## **BENZEDRINE SULFATE IN OBESITY**

**R. B. CHRISMAN, JR., M.D., and WILLIAM MAURY, JR., M.D.,\* Memphis, Tennessee**

There have been numerous reports on the use of benzedrine sulfate as an adjunct to a low-caloric diet in weight reduction. Since Rosenthal and Solomon observed weight loss in some of their patients even when dietary restriction was removed, it seemed interesting to report a group treated with benzedrine sulfate for varying periods before the curtailment of dietary intake.

### **MATERIAL AND METHODS**

Twenty-seven obese patients were chosen for the study. Patients with cardiovascular, renal, or hepatic disease were excluded. All but one of the group were women, twenty-one of whom were treated at the John Gaston Hospital for various gynecological disorders. The others were suffering from "uncomplicated" obesity.

All of the group had previously attempted weight reduction through diet. Thyroid extract had been given in eleven cases. In nine of these it had failed to cause weight loss and it was not well tolerated in one of the two in which it proved effective.

The original dose of benzedrine sulfate was five milligrams a day, 2.5 milligrams being taken fifteen to thirty minutes before breakfast and lunch. The dose was increased by 2.5 milligrams every fourth day,

but we did not exceed twenty milligrams. Other medication was given in indicated cases, but only one patient received thyroid extract in conjunction with benzedrine sulfate. *No dietary restriction was imposed.* Throughout the experiment the patients were frequently checked for weight, blood pressure, and endocrine function.

After periods ranging from two to fourteen weeks, and averaging seven, benzedrine sulfate was discontinued and the patients were put on a diet from which bread, potatoes, fats, and sweetened foods were eliminated.

### **RESULTS**

The weight loss during benzedrine sulfate therapy ranged from nothing to thirty pounds, with an average of fourteen. The average rate was two pounds a week. The greatest loss, as well as the greatest inhibition of appetite, usually occurred from the second to the fifth weeks. Fat disappeared chiefly from the abdomen and hips in most cases. In spite of the unrestricted diet, most of the patients stated that they had lost their desire to "nibble" or overeat. In a few cases there was no subjective realization that appetite was curbed, but the weight loss indicated that caloric intake was reduced. There were only two failures. These occurred in uncooperative patients who suffered from nausea which they as-

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cribed to the medication. It was found, however, that the nausea continued after the drug was withdrawn.

Aside from the curtailment of appetite, the effect most frequently reported by the patients was a sense of well-being and increased energy. The lassitude so frequently attendant on reduced food intake was never observed in our patients. In a few instances dysmenorrhea was relieved.

No harmful effects were observed. A few patients had mild undesirable reactions at the beginning of treatment, such as sleeplessness, dryness of the mouth, etc., but these were not considered sufficiently serious to warrant special attention. It is possible that, in certain cases at least, the nausea or nervousness caused by the underlying gynecological condition may have been aggravated by the drug. There was no significant rise of blood pressure during treatment.

On the maintenance diet which was prescribed when benzedrine was discontinued, the weight of most patients remained fairly stationary. Unfortunately we were unable to check on this in all cases.

Placebos were given at the conclusion of the treatment with benzedrine sulfate in five cases. Four of these patients gained from 1.5 to six pounds in five weeks, and the fifth lost .75 pounds.

#### COMMENT

The mechanism of weight loss has been variously attributed to augmented activity, prolonged stomach emptying time, diminished peristalsis, improved mood, inhibition of water retention, increase of blood sugar, and rise of metabolic rate, as well as to a direct effect on the appetite mechanism (one to four). Stimulation of motor activity is usually ineffective because of proportionately increased food intake. Gastrointestinal and metabolic effects cannot entirely explain the effect on body weight since doses seemingly insufficient to activate them may nevertheless have a definite effect on mood and appetite. In our series of cases we had no indication that the weight loss involved other factors than these. It is therefore our opinion that the effective-

ness of benzedrine sulfate in obesity is due to its central attack—i. e., it reduces abnormal appetite by way of the appetite mechanism, probably through hypothalamic stimulation; and it reduces the "anhedonic" desire to "nibble" because it improves mood, probably through cortical stimulation.

Although weight reduction was accomplished without other treatment than benzedrine sulfate, it is not suggested that the drug is a specific. It does not necessarily force patients to reduce their food intake. But our patients *wanted* to reduce and the medication enabled them to do so without great difficulty, whereas many of them had found this impossible with other measures. It is also significant that four out of five patients relying on the action of benzedrine sulfate gained weight when placebos were substituted.

In short, benzedrine sulfate appears to be indicated for patients who are unable to adhere to a dietary regimen, but in many cases, especially when the excess fat has been recently acquired, medication is not necessary. This has been repeatedly confirmed in our clinic. It is obvious that a combination of benzedrine and diet is even more effective than either alone. We tried this with a patient who seemed to have a good reason for wanting an unusually rapid loss of weight. By combining our routine benzedrine schedule and the diet described above, we obtained a loss of seventeen pounds in two weeks. Blood pressure remained unaltered and there were no ill effects. The patient lost an additional pound in the third week, during which she continued the diet without medication.

As to the permanency of weight loss, this is bound to vary with the individual. Benzedrine sulfate enables the patient to adhere to a low-caloric diet; depending on the volition and desire of the patient, it may thus establish better eating habits. In our series, the desired adjustment was often made within a few weeks.

#### SUMMARY

Twenty-seven obese patients who had proved refractory to weight reduction were given benzedrine sulfate without dietary re-



strictions for periods ranging from two to fourteen weeks. The average weight loss was two pounds a week, the total loss ranging from nothing to thirty pounds. There were two failures.

Unfavorable reactions were mild and transitory and there was no significant rise of blood pressure.

Most patients in the series reported decreased appetite, increased energy, and an improvement of mood.

It is concluded that benzedrine sulfate, chiefly by virtue of its central action, is a valuable aid in weight reduction.

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## REPORT OF THE USE OF PENTOTHAL SODIUM AS AN INTRAVENOUS ANESTHETIC\*

WALLACE L. POOLE, M.D.,† and CARROLL H. LONG, M.D.‡

Pentothal sodium was first used clinically by Lundy at the Mayo Clinic during the latter six months of 1934.<sup>9</sup> Since that time, he and others have reported its use in 40,944 cases with almost universal praise of its anesthetic properties. The drug owes its success as an anesthetic agent to the fact that it belongs to the group of short-acting barbiturates, which includes, besides pentothal sodium, the anesthetic agent, evipal. These preparations are destroyed by the liver in a process which occurs so rapidly that scarcely a trace can be found in secretions after three to twelve hours, and for all practical purposes the anesthetic effect lasts but three to thirty minutes, depending upon the dose which is used. The detoxification by the liver is accomplished without the occurrence of any hepatic damage which can be demonstrated clinically.<sup>2</sup>

Following intravenous pentothal sodium anesthesia, no significant changes have been observed clinically in the pulse volume and rate, the blood pressure, or electrocardiographic records of heart action. There is a constant occurrence of a very definite respiratory depression which is clearly demonstrated as a shallowness of breathing without change in the respiratory rate. This depression of respiration depends upon the amount of the drug in the blood at any one time, and, since the destruction of pentothal is so rapid, large amounts may be given safely in repeated doses over a period of time. In this connection, it is interesting to note that despite the curtailed respiratory excursion, there is no reported instance of atelectasis or pneumonia following pentothal sodium anesthesia. Clinical pathological observations have demonstrated no significant changes following the administration of this drug in blood sugar, nonprotein

nitrogen, uric acid, creatinine, or in the Quick hippuric acid test of liver function. Kidney function as indicated by urinalysis is not affected. Mild variations in blood sugar levels have not been of sufficient degree to influence sodium pentothal's favored use as an anesthetic of choice in diabetes.

Experimental investigations have demonstrated that the ratio of the maximal tolerated dose of pentothal to the minimal anesthetic dose is 4.5 in rats and 3.8 in dogs.<sup>5</sup> The minimal lethal dose in man has been estimated to be approximately thirty-five milligrams per kilo. The clinical margin of safety becomes especially evident when it is considered that induction of anesthesia is usually obtained by the administration of less than three milligrams per kilogram body weight and that subsequent doses are less than one milligram per kilogram body weight.

### CLINICAL CONSIDERATIONS

But for the introduction of two fundamental improvements in the technique of administration, intravenous pentothal sodium could not have achieved an effectiveness worthy of its great possibilities. The first of these involves the use of the intermittent method of administration in which the anesthetic agent is injected just as the indication arises. This technique permits the maintenance of an even anesthesia and, because of the rapidity of the destruction of the drug by the liver, makes sodium pentothal anesthesia as controllable as that of most inhalation anesthetics.

The second important development in technique is the constant administration of oxygen throughout anesthesia. If barbiturate narcosis is carried to a stage of surgical anesthesia, respiration, although it remains regular, is insufficient in depth to supply the body with sufficient oxygen; hence, a comparative anoxemia, indicated by a peculiar pallor and mild cyanosis, results. However, with the constant administration of oxygen, whether by intranasal catheter or by mask, this relative anoxemia is entirely

\*Presented to Washington County Medical Society, June 6, 1940.

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done away with, and the patient maintains a healthy complexion throughout the anesthetic. Thus the concomitant use of oxygen and pentothal sodium allows the maintenance of a depth of anesthesia sufficient for any operative procedure.

Aside from safety, there are generally three prerequisites of good anesthesia—viz., pleasant induction, adequate relaxation, and quick, pleasant recovery. Pentothal sodium admirably fulfills these requirements. Induction is a matter of a few seconds after the injection is begun. There is no excitement during the second stage, the patient drifting into unconsciousness as if in normal sleep. Taking advantage of the rapidity and quietness of induction, the surgeon is permitted to shorten the period of anesthesia by preparing the field of operation prior to the beginning of the anesthetic. Because of the similarity of the mode of induction to the universal "blood test," the unusually apprehensive thyrotoxic patient may be put to sleep in her room without any knowledge that operation is contemplated. Proof of the popularity of intravenous anesthesia among patients has been our experience that individuals, who have been subjected to this pleasant procedure once, request its use in subsequent operations upon themselves and their friends.

As has been already detailed, the second prerequisite is satisfied because adequate surgical relaxation can be maintained over long periods by the concomitant use of intravenous pentothal sodium and oxygen by inhalation.

What then of the third prerequisite for good anesthesia—viz., quick, pleasant recovery? One of our early cases was a young man who was held in surgical anesthesia for three quarters of an hour while a portion of his hand was amputated. Forty-five minutes later he was found sitting in his bed, eating hungrily from a full tray. One of the most welcome characteristics of the recovery period is its relative freedom from nausea and vomiting. Not all clinicians have had perfect records, but the fact seems to be established that postoperative vomiting is greatly reduced, a factor which is of immense importance as regards the

patient's comfort and welfare. There is also an absence of excessive sweating during the operating and recovery periods, a characteristic which must be partially responsible for the fact that shock seems to be much less than after other types of anesthesia. Following short operations, the length of the recovery period is extremely brief, averaging five to thirty minutes, but following longer procedures, full recovery may be delayed for as long as six hours. However, even in these cases, the patient may be roused in ten to sixty minutes, although, undisturbed, he prefers to sleep on. Postoperative restlessness seldom is seen.

Intravenous sodium pentothal has characteristics which make its use especially suitable for certain procedures. Thus the removal of the anesthetist from the field of action makes its use feasible in operations upon the head and neck, particularly in those cases where the use of the cautery or diatherm creates a distinct fire hazard. It is reported as a desirable anesthetic by ophthalmologists,<sup>8</sup> bronchoscopists, and laryngologists.<sup>3, 11</sup> It may be used to control the convulsions of anesthesia, tetanus, or eclampsia. The ease with which it is prepared and administered and the fact that it remains stable in solution for periods of twenty-four to forty-eight hours make it an anesthetic of choice in the exigencies of military surgery.<sup>1, 6</sup> The elderly and the debilitated tolerate intravenous pentothal sodium especially well, and it has been used as the method of choice also in diabetes, myocardial degeneration, asthma, chronic bronchitis, pulmonary tuberculosis, shock, and in patients where for one reason or another inhalation or spinal anesthesia is contraindicated. This form of anesthesia seems to be especially suited to obstetrical practice for several reasons:<sup>7, 16</sup> it has no effect upon uterine contractions except to enhance slightly their force, a factor which is thought to shorten labor; there is no depression of infant respiration, nor any increase in post-partum hemorrhage; a state of analgesia can be deepened quickly to one of anesthesia on occasion; patients under the effect of pentothal sodium are very ame-

nable to suggestion and cooperation is easily obtained.

That intravenous pentothal sodium is gaining a deserved popularity is attested by series of figures such as those from the Mayo Clinic<sup>10</sup> which report that in 1939 this method was employed alone or in combination in 27.2 per cent of all instances in which anesthesia was administered. Confidence in the method is also promoted by figures which indicate an anesthetic mortality rate of approximately one to 10,000 in the 40,944 instances in which it has been reported to have been used.

#### PERSONAL SERIES

The authors have used intravenous pentothal sodium as the anesthetic in a series of twenty-five cases listed as follows: seven appendectomies, three cholecystectomies, three herniorrhaphies, six gynecological procedures involving laparotomy, one thyroidectomy, one coccygectomy, one partial amputation of the hand, one incision of a carbuncle, one uterine dilatation and curettage, one excision of lymph node. The average length of operation was fifty-five minutes; the average recovery period two and one-fourth hours. Vomiting occurred in two instances in which an opiate had not been administered. The only postoperative complication observed was one instance of thrombophlebitis involving the vein through which the anesthetic was administered; this patient's only complaint was "rheumatism" in the shoulder of the affected side on the sixth and seventh postoperative days, an experience similar to one previously reported.<sup>13</sup> The degree of relaxation which was desired was obtained in every case, the anesthetic being particularly suited in our hands to those procedures requiring complete relaxation of the abdominal muscles and restriction of movement of the diaphragm. Adequate relaxation was obtained because the constant administration of oxygen by intranasal catheter in every case permitted the use of sufficient pentothal to produce surgical anesthesia.

Preliminary medication consisted of sodium amytal in sufficient dosage to insure a good preoperative night's rest, and 1/150 grain of atropine sulfate administered by hypodermic forty-five minutes before the

time of operation. Opiates were discontinued as preoperative medication because of the unnecessary additional respiratory depression which was observed in our early cases. We have used a five per cent solution for induction and a 2.5 per cent solution for maintenance of anesthesia. Because of difficulty experienced in preventing the blocking of the needle with clotted blood in a few instances, we recently have made use of a three-way valve which permits the constant administration of intravenous solutions during the operation and the addition of the anesthetic solution, when indicated by increasing depth of respiration or returning muscular rigidity. Repeated blood pressure readings, the rate and volume of the pulse, together with the color of the mucous membranes and nail beds, are taken as indications of the patient's condition, rather than the respiration, which may be all but imperceptible.

The addition of various respiratory stimulants to the anesthetic solution has been reported<sup>17</sup> to have produced as much as thirty per cent increase in the respiratory rate with a concomitant increase in depth. We have never seen the need for this measure, but have given two cubic centimeters of metrazol intramuscularly at the end of the anesthetic in an effort to shorten the recovery period. It has been found wise also to instruct the nurse who remains with the patient during the recovery period in the method of holding the jaw forward and up until the return of the reflexes.

Our total experience with intravenous pentothal sodium, while small, has been most gratifying, and it is our belief that the introduction of this method has been a distinct advance in the art of anesthesia, offering to the patient escape from a terrifying experience and to the skilled anesthetist a trustworthy addition to his armamentarium. Pentothal sodium does not afford a foolproof mode of anesthesia, nor is its use free of danger even in the hands of the expert. However, used by a cautious and skilled anesthetist who has adequate equipment at hand, intravenous pentothal sodium is both safe and satisfactory as an anesthetic agent adapted to a wide field of surgical procedures.



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## A STUDY IN THYROID HEART DISEASE WITH NOTES ON MASKED HYPERTHYROIDISM\*

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The term thyroid heart disease is still represented in etiologic classification of cardiac disorders. Yet the validity of such a terminology, outside the deference accorded long accustomed usage, is open to question. Certain it is that in the past few years the conception that there is a toxic effect on the heart from the abnormal secretion of the thyroid is lessening in favor and is discredited or rejected by the majority of investigators. That the thyroid has a specific effect on heart muscle many will deny; that it creates an overactive heart subject to fatigue, palpitation, and tachycardia is easily demonstrated and recognized by all. Why then practically the controversy? It is because the symptoms of cardiac disorder arising as a result of hyperthyroidism may be entirely remedied by the proper procedures, whereas such is not the case in the vast majority of cardiac afflictions. Too happy a prognosis in angina pectoris, hypertension, or heart failure accompanied by thyrotoxicosis might be given if it were conceived that hyperthyroidism alone explained their origin and it were not realized that subtotal thyroidectomy, the preferred treatment, rarely completely relieved them.

The testimony is conflicting. There have been some reports of myocardial damage attributed directly to thyrotoxicosis. Weller<sup>1</sup> and his associates found increased evidence of myocardial fibrosis, endocardial sclerosis and cellular infiltration and one case of focal myocarditis in exophthalmic goiter. However, there were no significant changes in the heart muscle of controls, as compared to those of adenomatous goiter. Kepler and Barnes<sup>2</sup> found some cardiac hypertrophy. Burnett and Durbin,<sup>3</sup> finding occasional cardiac enlargement and systolic murmurs, believed they noted permanent heart damage in a few cases of toxic goiter. Jones, Seabrook, and Menne<sup>4</sup> feel that cardiac failure and auricular fibrillation together with

other findings occurring in young hyperthyroid individuals suggest the probability of specific thyroid heart lesions.

However, by far the vast majority of studies report no distinctive evidence of specific cardiac pathology due to thyroid disease. Rake and McEachern<sup>5</sup> found nothing at autopsy or on experiment to lead one to believe in thyroid lesions. Menne<sup>6</sup> and his associates found some degeneration and fibrosis but felt they could be explained by overwork. Lerman and Means,<sup>7</sup> Thomas,<sup>8</sup> Read,<sup>9</sup> and many others feel that hyperthyroidism *per se* does not produce so-called thyroid heart disease. Ernestene<sup>10</sup> admits thyrotoxicosis could cause enlargement but finds no evidence of characteristic myocardial changes. In fact, it may be conservatively stated that it is now the common view that the thyroid itself produces no specific lesions.

Yet the mode of its action is still open to dispute.

Some feel that the fatigue of the heart muscle alone suffices to produce all symptoms, whereas to the majority it is evident that only with underlying cardiovascular changes do auricular fibrillation and heart failure occur, the normal heart being capable of withstanding all possible strain. Whatever the exact mechanism, it is clinically and experimentally evident that the muscle of the heart is adversely affected by the increased metabolism. The thyroid heart is more susceptible to infection.<sup>11</sup> It shows diminished or depleted glycogen content and increased lactic acid formation.<sup>12</sup> Thyroxin has been proved an exciting factor in the presence of increased vagal action in the production of auricular fibrillation.<sup>13</sup> The pulse is increased, the minute volume output of the heart and the velocity of blood flow stimulated to the level of the elevated metabolic rate.<sup>14</sup> The vital capacity of the lungs may be reduced and the cost of work itself increased.<sup>15</sup> Probably the heart would enlarge but as has been suggested by Harrison<sup>16</sup> increase in minute volume probably

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does not cause hypertrophy whereas increased work per beat might do so. Weiss<sup>17</sup> feels that cardiac overwork may result in thiamine chloride depletion and that this may be a factor.

From all these considerations it is evident that the heart is sorely taxed in hyperthyroidism even though the lesions in the heart be not specific. Yet thyrotoxicosis is a condition that is readily amenable to therapy. As Barker and his associates<sup>18</sup> suggest, increased thyroxin in hyperthyroidism acts as a toxic factor similar to that present in acute infections and its effects disappear when the period of toxemia is terminated, the entire mechanism returning to the normal state. This being the case, every effort should be made to determine the condition at an early stage, for, by so doing, we will preclude the advent of heart failure and will assure the patient years of useful health.

Thus we find that our original title no longer aptly applies and that the preferable term would be "the heart in hyperthyroidism."

Whereas hyperthyroidism produces no specific lesions within the heart, it may nevertheless proceed by metabolic action to initiate severe cardiac distress. To obviate these cardiac symptoms is important. But the study of the heart signs of thyrotoxicosis is only a portion of the study of the whole disease. It is through a full knowledge of the varied manifestations that we may spare the heart a most trying ordeal.

Early diagnosis is valuable and may be lifesaving, but the disease presents so many confusing aspects that this is not always so simple a procedure.

The obvious symptoms and signs of typical exophthalmic goiter and toxic adenoma are well known. They include glandular changes, eye signs, nervousness and irritability, tremor, loss of weight, tachycardia, increased pulse pressure, auricular fibrillation, warm skin, increased intestinal motility, occasional glycosuria, and an increased metabolic rate. Cases with such findings are readily recognized.

It is to the unusual or so-called "masked" hyperthyroids that we should devote our most intense study. For these cases readily

simulate a great variety of disorders. There is one condition, too, that frequently resembles hyperthyroidism that it is important to exclude. This is neurocirculatory asthenia or so-called effort syndrome or irritable heart. A consideration of its differential diagnosis aids in distinguishing hyperthyroidism in its masked forms.

#### DIFFERENTIAL DIAGNOSIS NEUROCIRCULATORY ASTHENIA AND HYPERTHYROIDISM<sup>19</sup>

##### NEUROCIRCULATORY ASTHENIA

Mottled, cold, or clammy. Evidence of vasomotor instability.

Loss, but appetite is poor.

Normal.

Variable, fluctuation especially on effort. Returns to normal while sleeping<sup>23</sup> and drops while basal metabolic rate is taken. No auricular fibrillation.

Below normal.

No change.

Forceful. Blood pressure probably low. Sounds not distinctive.

##### HYPERTHYROIDISM

##### *Skin*

Warm, moist, and velvety. May be salmon colored. Finds cold agreeable ("the Eider-down Test"); prefers few bedclothes.<sup>20</sup>

##### *Weight*

Loss, but appetite excellent.

##### *Basal Metabolic Rate*

Plus, but may be within upper normal limits, as plus fifteen may be hyperthyroidism for individuals with normally low basal metabolic rate.<sup>21, 22</sup>

##### *Pulse*

Continuously elevated. Frequently auricular fibrillation.

##### *Temperature*

Above normal or normal.

##### *Stools*

May be frequent formed stools. Occasional glycosuria.

##### *Heart*

Forceful. Peculiar, sharp thrust. Occasionally there is a pleuropericardial friction sound.<sup>7</sup>

The above differentiating points will serve to aid in the diagnosis of hyperthyroidism from other conditions with which it is commonly confused.

An illustration of such a problem representing some of the pitfalls into which we are likely to be led is our first case:

Case 1. H. M. P., a male, forty years of age, complained of extreme nervousness, paresthesias, dyspnea, palpitation, scotomata, tremor and a variety of intestinal symptoms of several months' duration. Recently, however, he had gained considerably in weight. He stated he took an occasional drink.

He was a sthenic individual, weighing 204 pounds, with a blood pressure of 176/130, pulse of 108, fine tremor of fingers and a slight lid lag. The thyroid was normal in size but the eyes appeared to stare slightly. The electrocardiogram was within normal limits. The sedimentation rate, blood, and urine were normal.

The basal metabolic reading was plus sixty-six on two consecutive tests.

This appeared to be a typical hyperthyroidism but the recent gain in weight was suspicious.

Then we learned that the patient was a great alcoholic.

He was refused all liquor. In three days his blood pressure had dropped to 140/90, the pulse had declined to eighty and the basal metabolic rate was within normal limits.

The case illustrates the error in too great faith in the metabolic reading and the wisdom of strict attention to weight changes.

Errors in diagnosis often occur, particularly in older individuals because the thyroid may be so slightly altered as to escape notice and through long continued intoxication may produce symptoms in other organs that tend to obscure or "mask" the causal toxemia.

#### HYPERTHYROIDISM MASKED AS HEART DISEASE

Such a form of "masked hyperthyroidism" is that in which the condition simulates heart disease. In 1924, Levine and Sturgis<sup>24</sup> reported eleven cases in which cardiac symptoms had been present for a considerable time. These had been regarded as due solely to heart disturbance. Three cases had angina pectoris. Yet adequate study showed them to be thyrotoxic

individuals exhibiting symptoms predominant in the cardiovascular system. Particularly noticeable was the fact that they were restless, nervous and alert, and showed a definite tendency to loss of weight. Since that time many other such cases have been described.<sup>20, 28</sup> Other signs are auricular fibrillation and rarely, flutter, tachycardia, increased pulse pressure, loud and snapping first heart sound, loss of weight in spite of good appetite. The eyes may stare slightly or be bright and there may be definite restlessness and emotional instability. Occasionally there is glycosuria. The entire condition may appear in all respects a purely cardiac condition.

Thus it may be emphasized that any patient with cardiac decompensation who has lost weight (edema otherwise causes increase of weight) or who has a high pulse pressure or auricular fibrillation should have a careful examination for hyperthyroidism. The control of thyrotoxicosis will return compensation and take a large part of the load off the crippled heart. It will not cure the heart for the fact of failure practically always indicates a myocardium damaged from another cause.

#### LISTLESS HYPERTHYROIDISM

In 1930, Hamburger and Lev reported cases of placid hyperthyroidism.<sup>25</sup> Instead of restlessness, emotional instability and irritability these patients showed a peculiar condition of apathy. Lahey called them "apathetic hyperthyroids." There was a type of "masklike" face and there was no tachycardia. But the basal metabolic rate was high, there was general weakness, easy fatigability, redness or pigmentation of skin, and unexplained loss of weight. Generally there was no stare. Fibrillation occasionally occurred. The blood pressure was normal or elevated. In each instance the patient had been under treatment for heart disease, diabetes, or other conditions.

Case 2. Another physician generously allows me to report his case.

J. T. H., aged sixty-three, complained of severe dyspnea and loss of weight. The examination revealed a placid elderly male with rather prominent eyes. The blood pressure was 120/80, the heart was slightly



enlarged to the left and X-rays showed a dilated ascending and transverse portion of the aorta. The rhythm was regular and no murmurs were heard. The pulse rate was around 140. A basal metabolic rate was not done.

No definite diagnosis was made. Rest and sedation was advised but without appreciable improvement. In as much as the patient demanded active therapy he was given two doses of intravenous sodium iodide. Improvement was rapid and marked. The pulse dropped to ninety-five per minute.

One day while sitting the patient coughed and a large retrosternal mass rose into the neck. It was then realized he had a substernal goiter. The basal metabolic rate showed plus forty-five.

Subsequently a subtotal thyroidectomy was done. The response was excellent, the pulse dropping to eighty per minute, the dyspnea clearing almost entirely.

I report this case as an error any of us might have made. The X-ray did not reveal the substernal goiter. The heart appeared enlarged and might have explained all the symptoms. The placidity of the individual did not at all suggest hyperthyroidism. But the tachycardia was suggestive, the loss of weight significant, and the response to iodine diagnostic.

#### SIMULATING PARKINSONISM AND WITH LOW METABOLIC READING

Somewhat similar to the above, hyperthyroidism may simulate Parkinsonism in its masklike facies and tremor.<sup>26</sup>

Case 3. R. C. O. was sent in September 6, 1939, by an insurance company claiming compensation for "heatstroke" occurring July 11, 1939. He saw a physician who confined him to bed for one month after which he continued to be very nervous, developed a marked coarse tremor and weakness. He lost fifteen pounds in one month. He admitted that he had been somewhat nervous for two months prior to his "heatstroke." The physician's diagnosis was heatstroke and male climacteric.

In 1918, he had suffered a severe attack of influenza necessitating a prolonged stay in bed. There were no symptoms related

suggestive of an encephalitis at this time.

The examination revealed a somewhat thin, nervous male of fifty-five. The eyes were somewhat prominent and there was a definite lid lag. The thyroid was barely palpable. The lips and nail beds were cyanotic. The blood pressure was 140/90, the pulse 132 and regular, the heart sounds not abnormal. There was a "cogwheel" type reaction on extension of the biceps tendon. The spinal fluid showed a slightly positive Pandy but was otherwise not unusual. The basal metabolic rate was plus forty.

We felt that the entire condition could have been caused by the thyrotoxicosis, but because of the intention tremor, "cogwheel" biceps tendon, placid visage, and history of influenza, Parkinsonism could not be ruled out. A subtotal thyroidectomy was done with ultimate complete recovery.

This case illustrates probably two of the types of "masked" hyperthyroidism, those of the "apathetic" type and those simulating paralysis agitans. The story of loss of weight and the finding of unexplained tachycardia should always suggest hyperthyroidism.

McMillan and Wendkos<sup>22</sup> and others report a case wherein the basal metabolic rate had been about plus twenty. Nevertheless the individual had hyperthyroidism as shown by the presence of auricular fibrillation and response to treatment. As has been mentioned, Means<sup>21</sup> emphasized the possibility of thyrotoxicosis with a normal basal metabolic rate.

#### MASKED AS ESSENTIAL HYPERTENSION

According to Robinson<sup>27</sup> the condition may simulate essential hypertension. He found hyperthyroidism in several cases with a diastolic blood pressure above 100. Burnett and Durbin<sup>28</sup> also found "that in toxic adenoma there does appear to be a substantial increase in the diastolic pressure." But this is not the opinion of most. Whitten and Mahon<sup>28</sup> feel that if the diastolic blood pressure is elevated above 100 millimeters of mercury it can be assumed that the patient has a true hypertension in addition to hyperthyroidism. However, when the systolic pressure is increased but the dias-

tolic pressure is not raised above 100 millimeters of mercury, the blood pressure elevation is probably due entirely to hyperthyroidism. But one cannot be certain of this until after thyroidectomy. In essential hypertension the blood pressure will not be altered appreciably by operation.

In every case of hypertension that develops auricular fibrillation it is safest to do a basal metabolic rate and try the iodine test.

#### INITIATING ANGINA PECTORIS

In 1928, Hamburger and Lev<sup>29</sup> called attention to the fact that thyrotoxicosis by its persistent demand can unmask a potential or latent angina pectoris. The heart driven on by hyperthyroidism has but a brief diastolic interval in which to insure complete coronary circulation; the demand on the heart is greatly increased. It is amazing that more symptoms of angina are not observed. Thyroidectomy often affords considerable relief in cases even if not associated with hyperthyroidism.

It is still felt that an underlying cardiac pathology is necessary for the symptoms of angina to appear in hyperthyroidism, but angina pectoris is no contraindication to subtotal thyroidectomy in such cases.

Case 4. M. C., a female, thirty-five years of age, underwent a subtotal thyroidectomy for exophthalmic goiter in 1933. Fourteen months later she developed a moderately severe diabetes mellitus, requiring fifty units of insulin for control of glycosuria on a 1,890 calorie diet. In September, 1940, she began to experience attacks of substernal pain radiating down the left arm. Her blood pressure had varied from 120/74 to 150/104. A teleoroentgenogram showed normal heart size and configuration. The basal metabolic rate was now plus six. The EKG showed a relatively low voltage with doubtful evidence of myocardial involvement. The seizures were not related to meals and a blood sugar determination during an attack gave a reading of 136 milligrams sugar per 100 cubic centimeters of blood. Nitroglycerine relieved the pain rapidly. On small doses of potassium iodide the anginal pains cleared completely.

This case illustrates the finding of angina

pectoris in a young individual seven years after a subtotal thyroidectomy. However, the original examination showed a blood pressure of 150/104 and the EKG was not normal. We feel that the normal basal metabolic rate is not accurately indicative and that mild hyperthyroidism tended to bring on the attacks. There was no evidence of hyperinsulinism as a cause.

This patient also illustrates factors considered in the above classifications of "masked hyperthyroidism." Apparently hyperthyroidism was present though the basal metabolic rate was within normal limits. So-called essential hypertension may have been present. The thyrotoxicosis initiated seizures of angina pectoris. Finally, the condition cleared after the administration of iodides, the basal metabolic rate retiring to a minus eight.

However, it may be asked whether this is not one of those cases wherein it may be questioned whether hyperthyroidism does not have some specific action on the heart muscle. For the individual is young, the blood pressure has been within normal limits, the pulse not rapid and yet angina pectoris has developed. But the presence of diabetes mellitus as a contributing cause brings up added questions.

#### MASKED AS SENILITY

In older individuals hyperthyroidism occasionally simulates pulmonary disease with cough, sputum, and dyspnea. But the coarse tremor, fibrillation, and the increased basal metabolic rate are notable. The findings of senility should not lessen the need for a study of other origin for loss of weight and auricular fibrillation.

#### GASTROINTESTINAL SYMPTOMS

Finally, the symptoms may be almost entirely intestinal. Freund and Cooksey<sup>30</sup> report cases in elderly patients in which the chief complaints were nausea, vomiting, anorexia, abdominal pain, diarrhea, weakness, and loss of weight. There was a moderate tachycardia. Though nervousness and tremor were present in varying degrees, they were not initial complaints. Emaciation was a prominent sign in such



cases. There was no goiter or exophthalmos. Iodine usually controlled the vomiting.

### SUMMARY

A review of modern conceptions concerning the mode of action of hyperthyroidism on the heart is given. The differential diagnosis of thyrotoxicosis is considered. Several cases are presented as exemplary of the difficulties in such a diagnostic study.

### CONCLUSIONS

The changes in the heart in hyperthyroidism probably do not represent any specific lesions resulting from the action of increased or abnormal thyroid secretion alone.

Presumably they are the result of increased metabolic demands alone or the result of such demands on an already damaged or inefficient myocardium.

The term "the heart in hyperthyroidism" is preferable to that of "thyroid heart disease."

That hyperthyroidism does burden the heart is unquestioned.

For the safety of the patient the diagnosis should be established as quickly as possible, for effective methods of treatment are available.

Diagnosis is not always so simple. Hyperthyroidism may simulate a variety of conditions.

In a review of the various forms of concealed or "masked" hyperthyroidism it is found that outside the eye signs and obvious changes in the thyroid gland certain findings are of diagnostic importance. Those that should never be overlooked are:

1. Loss of weight, especially if the appetite is good.
2. Auricular fibrillation.
3. Tachycardia of unknown origin.
4. Cardiac failure without adequate cause.

Additional information is to be derived from the basal metabolic reading but this is not pathognomonic. The iodine response aids in diagnosis especially if the metabolic reading is within normal limits.

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# DISCUSSION

DR. TINSLEY R. HARRISON (Nashville): Doctor Livingston's timely and important paper illustrates one general principle which we should keep in mind constantly. That is, that some forms of heart disease are curable. I think from a therapeutic standpoint it is well to divide the underlying causes of heart disease into three groups: (1) those for which we have no specific therapy, and that includes most of the more common causes of heart disease, such as arteriosclerosis and rheumatic fever; (2) those for which we have a specific surgical therapy; and (3) those for which we have a specific medical therapy.

The latter two groups are not the most common groups of causes of heart disease, but they are common enough so that by keeping our eyes open we can find a good many patients who appear at first sight to have a more or less hopeless heart disease for whom we can do a great deal by treating the underlying cause.

In the types of disease which are amenable to surgical therapy we can think offhand of three kinds. One of these is the thyrotoxic heart. Another is constrictive pericarditis, usually, but not always, the result of tuberculosis, the condition in which one has a thick pericardium which clamps down on the heart due to contracture of the scar tissue, and impedes the filling of the heart. That condition can be completely cured in some instances by carefully peeling the shell off the heart. Third,

we have the arteriovenous fistula, which is a rare but occasional cause of heart failure.

As regards those conditions which are specifically amenable to medical therapy, they also are rather rare, but should be kept in mind. One of them is the beriberi heart, which is extremely uncommon in the United States, but quite common in certain parts of the world. Another is the myxedema heart. That is rare also, but when seen it responds dramatically to thyroid and is resistant to other forms of cardiac therapy.

Then we have the unusual instance of heart failure entirely on the basis of severe anemia. Quite frequently with the clearing up of the anemia, the cardiac condition clears up entirely. There are a few others, but those are the more important ones.

From a practical standpoint I think it is wise to think of heart disease in terms of factors which are not curable, factors which are surgically curable, and factors which are medically curable.

Doctor Livingston mentioned the frequency with which the problem comes up of the diagnosis of hyperthyroidism in a person who has obvious cardiac disease. In the absence of congestive failure, the diagnosis usually can be made fairly readily, but in the presence of congestive failure it is often difficult to diagnose hyperthyroidism because congestive heart failure may cause loss of weight, sweating, and tremor, and further because congestive heart failure itself is usually associated with a well-marked elevation of the basal metabolic rate. The heart is doing more work, the respiratory muscles are doing more work, and hence when one attempts to measure the basal metabolic rate it is high. Therefore, the decision as to whether a given individual who obviously has congestive heart failure has thyrotoxicosis too is a difficult decision.

Two points have been quite helpful in our experience in this regard. One of them is the repeated determination of the basal metabolic rate before and after iodine. If thyrotoxicosis is playing a role in the elevation, it will usually subside definitely and measurably under the influence of iodine therapy.

Another procedure which has often been helpful is doing the metabolic rate before and after the administration of morphine. If a person's increased metabolic rate is largely the result of increased respiratory movement, as is the case in people with congestive failure and a high metabolic rate, morphine will tend to lower the rate, whereas in people with thyrotoxicosis as a cause of increased metabolic rate, morphine has only a slight effect in reducing the metabolism.

One other point might be mentioned in regard to therapy. Doctor Livingston emphasized the frequency of auricular fibrillation, and even in people who do not have it originally it is not uncommon for auricular fibrillation to occur postoperatively. In this condition quinidine is a useful drug. The



patients who are highly toxic before operation are the people who are most apt to develop auricular fibrillation postoperatively, and we have the impression that in a good many instances this can be prevented by the routine administration of quinidine during the day prior to operation and for the first day or two afterward.

I have enjoyed Doctor Livingston's paper very much. I think it is a timely subject, and I hope we can all think more in terms of those factors which cause heart disease and which, like thyro-

toxicosis, are to some extent, at least, treatable successfully.

DR. PHILIP H. LIVINGSTON (closing): Doctor Harrison always gives us many valuable points. He is such an excellent teacher.

I might mention one point. It is significant that the basal metabolic rate in congestive failure rarely rises above plus thirty. A higher than plus thirty metabolic reading generally is indicative of hyperthyroidism.

## SOME NOTES ON THE NEUROLOGY OF CHILDREN\*

W. DE GUTIERREZ-MAHONEY, M.D.,† Nashville

Mr. Chairman, Ladies and Gentlemen: Your society is constituted of people who have special interest in, and qualifications for, the management of children. It is well recognized that, for the proper care of infants and children, special study and training, as well as point of view, are necessary. The infant is not simply a miniature of the adult. Its anatomy and physiology, and the pathological reactions of these two disciplines, are quite a field in themselves. This has already been recognized with regard to problems of infection, nutrition, behavior, and of surgery. Gradually but surely a special field of organic neurology for children is being developed, and, in time, this special field should stand as securely as does that of infection and nutrition. But it is only after special study and care have been given to it that we shall reach the goal of more adequate understanding, for at present our great difficulty as regards the neurology of children is that we have not the necessary knowledge to the same degree as we have regarding the neurology of adults.

When a problem in clinical neurology is presented, and here it makes no matter whether the age of the patient is one year or fifty, the immediate problem is to determine at which level in the nervous system the noxious agent is acting. The second problem is a determination of the nature of that agent. In the adult the first can frequently be determined from the history elicited from the patient, but in the child one is much more dependent upon the examination. The second depends upon the clinical course and past experience, which means an understanding of the incidence of the various types of diseases of the nervous system in children.

The neurological examination of any patient is usually a longer and apparently more complicated matter than the ordinary

examination, but through practice and repetition of a routine of examinations the physiological alteration can be identified readily. Essential matters will not be overlooked if the examination is carried out in the same orderly way at each session.

I shall not burden you with a repetition of the various details, but I would urge you at least to have an outline, and the presentation of this might be allowed. As in every examination a full measure of success can be obtained only by making full use of our powers of observation. This means that from the time that we make contact with the patient, be it either with our sense of smell or hearing or, as is more usual, with our eyesight, our special senses will take in and measure every stimulus which is offered. With infants this is especially important, and, more frequently than not, you will gather practically all necessary information by observation of the spontaneous activity of the patient. It must be almost redundant for me to suggest this to you who make so many of your examinations in this way, but it cannot be overemphasized even when we are dealing with a highly intelligent individual who can cooperate to the full according to our desires. I say this because very frequently the pathological physiology of the nervous system is manifest only during unconscious activity in which normal reflex action is disturbed, normal emotional reactions lacking, or coordinate activity missing. Thus, we may observe that, as a patient walks toward us, he does not swing one arm, or if, as we speak with him, when he smiles he does not move one side of his face as well as the other. It is only by constant and complete observation that every possible sign will be caught.

It is usually easiest to begin at the top and to work down. Thus, we shall make our first observation with regard to the mental level of the child from his speech or from his reaction to such circumstances as we may present. If he is of school age or older, this examination will be facilitated.

Following the examination of cerebral

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function, the cranial nerves are next to be observed. Disabilities of these are of more specific value for localization than that of the mental faculties which, if altered in infants or children, indicate to us merely that there is a disorder of higher function.

I shall refer only to those aspects of the cranial nerves which are of special importance. You are all too well familiar with the routine examination to have me enter into a long discussion of it. The visual acuity may be determined in the ordinary way by reading letters of certain size at a certain distance if the child has progressed to that stage. Otherwise, and with those of a low mental age, one must resort to the matter of presenting desirable objects for which the infant might grasp. The vision which is so retarded as to be ineffective for noticing even such gross objects as toys is to be found with extensive disease of the occipital lobe where normally vision is represented in the cortex. This may also be present after a long-standing increase of intracranial pressure which has led to secondary optic atrophy as a result. Disturbance of the visual fields can also be tested grossly in the same way by bringing objects in from the side and noting how soon they are observed. A disturbance of this kind will be a decisive help in localizing a lesion, for the architecture of the visual pathways is such that interruption at any one place gives a characteristic impairment of the visual fields.

The fundi should be examined with great care, and we may see that the optic nerve head is quite normal. If this were so in the presence of blindness, we would realize that the disturbance was in the receptive area of the occipital lobe. On the other hand, the optic disc might be atrophic. The optic atrophy might be that which we call primary in which the disc is sharply outlined with a distinct physiological pit and no alteration of the blood vessels. On the other hand, the atrophy may be that which is spoken of as secondary in which the optic disc is indistinctly outlined, the physiological pit is filled in or completely obliterated, and the vessels small and tortuous. There may also be evidence of swelling of the nerve heads with dilated and tortuous

veins. This would indicate an increase of intracranial pressure which should be looked into more carefully.

Next in order will be the extraocular and pupillary mechanisms which are bracketed under the third, fourth, and sixth nerves. We should observe any difference in the width of the palpebral fissures, which is the usual clue to ptosis. Then we should see if on the side of the ptosis the pupil is smaller or larger than the other. If it is smaller, there is a lesion of the sympathetic system on that side. If it is larger, this will indicate a paralysis of the homolateral oculomotor nerve. We shall have noted if there is a squint and if the eye-balls move in all directions and without any nystagmus; also, even if there is no ptosis, if the pupils are equal and regular, and if they react well to light and on convergence.

The fifth nerve comes next. This, as you know, consists of a motor as well as of a sensory mechanism. We may already have seen, from observing the patient, that the blink response on one side was not as brisk or as frequent as on the other. This might, as the corneal reflex, have been due to a deficiency in reception of the sensory stimulus, or to a weakness in the execution of the response by the muscles which are actuated through the facial mechanism. Sensation over the face can be tested with pinprick and, if the patient is more cooperative, with light touch. The motor functions must be observed in those who are not adequately cooperative when they are eating or using the jaws in any way whatever. In cooperative patients we can have them bite several times and palpate the temporal and masseter muscles at the same time.

The facial muscles may be little or much affected. If the latter, there results such a degree of disability that the patient cannot close the eyes or move the face, and the lesion is one involving the nucleus or the nerve. The disturbance may be minimal if it affects one of the upper motor neurones which run from the cortex to the pons. In such an instance the eye can be closed, and the weakness about the mouth may be hard to demonstrate, possibly only during

unconscious activity such as smiling or in coordinate activity while the patient is squeezing one's hand or making other extreme effort. At such times the facial musculature is thrown into the full response; if there is a defect this does not happen.

The patient's ability to hear can be tested readily with whispered voice or loud noise. The mechanism of the ninth and tenth nerves can be checked by noting the tone of the voice, his ability to cough, and whether or not he has difficulty in swallowing. The eleventh nerve can be tested by palpation of the sternocleidomastoid muscles on active rotation of the neck and of the trapezius on raising the shoulders against resistance. The twelfth nerve function is noted by having the tongue protruded and determining if it comes out in the mid-line and if there is any atrophy or fasciculation.

The motor function of the extremities and trunk should then be tested. This examination includes the posture, tone, and state of nutrition of the musculature. The presence or absence of localized atrophy and fasciculation is determined. The power of each muscle group is noted, and tests for coordination and the performance of rapidly alternating movements are carried out to determine the state of cerebellar function.

The reflexes usually follow at this point. We all know how these are elicited and appreciate the significance of any variation from the expected normal. If the tone of the muscle is greatly reduced, we shall be unable to elicit any of the regular jerks because they are all stretch reflexes which depend basically upon proper muscular tone. A difference in the reaction on one side or the other is quite significant. An exaggeration of the reflexes is found in association with a disturbance of the pyramidal pathways above the level of the reflex. The cutaneous reflexes, the abdominals, the cremasterics, and the plantars may also be disturbed in the presence of the same type of supranuclear lesion, the abdominals being absent and the plantar response being altered from a normal flexor to a pathological extensor. It is of interest,

though, that in children these usual manifestations of an upper motor neurone lesion are not always present.

Sensation is one of the most complicated and most difficult of all faculties to test. It requires the greatest of cooperation from the patient and the keenest observation by the examiner. In the infant even painful sensibility is not very acute. Touch stimuli cause responses about the eyelids, nose, and lips. Cold may be felt. Thus, the examination of sensation in the infant is usually limited to the perception of pain. In older children who can cooperate the examination should be as complete as would be desired, testing for pain, temperature, light touch, for the perception of vibration, passive motion and position, as well as for those faculties which are mediated through the cortex such as the identification of texture, two-point discrimination, form, and consistency.

We shall already have made careful observations in our general examination regarding the head, spine, station and gait, so we shall not delay by considering these matters now.

Thus, we have gone over the clinical examination of the nervous system of the child. The completeness of our findings will depend in great measure upon the cooperation of the patient, but, in the infant, our success will be proportionate to the fullness of our own observations of their spontaneous behavior. At any rate, in the end the evidence will have to be put together from the positive as well as from the negative side. We shall have to add up what has been noted to be deficient. We shall also have to add what is definitely in order, and from a consideration of the two decide on the significant alterations of physiology. From this, an understanding of the disturbance in terms of anatomy will come about and thereby a localization of the lesion at a particular level.

Not infrequently one will find that the disturbance of function cannot be explained on the basis of one lesion, but that it may be explained on the basis of multiple lesions, or possibly upon a system degenerative disorder. When these latter two complications arise, further concern must be



given to the history and clinical course before deciding on the diagnosis.

For a proper understanding of the physiology of the infant's nervous system it is well to recall that when born the nervous system is anatomically incomplete. Myelination is not fully accomplished before the third month or later, and although immature structures may react physiologically, there is a close relationship between full function and complete myelination. Thus, in the newborn the behavior is essentially that of an animal without its cerebral cortex. There is thus no true voluntary activity. The motor reactions are entirely reflex and there is no inhibition of this activity. It takes about six months before the higher levels begin to exert their influence on the infant's lower nervous system.

It might be well to review some of the responses which are elicitable in the infant, which, if present at a later period, would be considered signs of disturbed physiology. The first of these is the plantar response. Although there has been much study with regard to this phenomenon, there is no absolute agreement, although most authorities feel that the response is variable in the first few months. Some consider dorsiflexion of the great toe in the infant not identical with the same response which in the adult is pathological. Still one must not overlook the fact that when the sole of the foot of a baby is stimulated, there is withdrawal (flexion) of the leg as well as dorsiflexion of the great toe. This, to my mind, is the very same thing as the pathological reflex in the adult, for it is only a part of the flexion reflex as we know it in the spinal animal. The plantar flexor response becomes established between the first and second years, and it is difficult to establish clinical importance to it before the end of the second year. After this time an extensor response would certainly indicate a lesion of the pyramidal pathways (upper motor neurone).

At the same time one might consider the abdominal reflex. In the infant the extremities are also flexed when the abdomen is stimulated. This again is similar to

the flexion response (pathological) mentioned above under the plantar reflex. It is almost the end of the first year before ordinary dependability can be placed upon the abdominal response. After that, flexion of the legs when the skin of the abdomen is touched would be pathological.

In the adult the grasp reflex signifies a disturbance in the contralateral premotor region of the brain. This response is present constantly until after the third or fourth month of the baby's life. The response is elicited by putting a finger or an object in contact with the palm of the baby's hand. The reflex response is a tight closure of the fingers about the object, which is exaggerated if an effort is made to draw the object out of the hand.

Thus, these common reflexes are normal if elicited before myelination is accomplished and simply signify the same as they do in the adult, namely, that there is no continuity between the higher and spinal levels. This, in the adult, is due to pathological interruption of the connection, while in the infant it is to be expected until the connections have become complete in the normal course of development.

With a basic understanding of the anatomy of the nervous system as well as of its simple physiology, the localization of a lesion at a specific level will be made after a careful examination has demonstrated the pathological physiology present.

The nature of the lesion itself will require further analysis. This will be got from the history and from the clinical course. Other help in arriving at the nature of the process is a consideration of the frequency of the many types of affections of the nervous system in children. The relative percentages are different than in adults. The most common are those due to congenital malformations and birth injuries. The second very large group is that in association with acute infection, in which the nervous system itself is affected or its meninges. The next and almost equally large group is that of the epileptic. Many of these may also fall into the group of congenital malformations and others into the degenerative disease class, although

the great bulk of them are members of that tremendous community of convulsives, the cause of whose distress we do not know. Following up on these groups, we come to the intracranial tumor category which in children is so different from that of adults. The tumors are mostly of the posterior fossa and brain stem. About twenty-five per cent of them are found above the tentorium; that is, involving the cerebral hemispheres. The peak of incidence is reached between five and six years, and, as might be expected, the nature of the tumors, even where they have not infiltrated the brain stem and where the technical aspects of their removal are more favorable, are mostly of a less mature type than are usually found in adults. The outlook is therefore not as hopeful as in the more mature class.

There then follow the smaller categories of degenerative diseases, vascular disease, and syphilis of the nervous system. The latter is becoming less common than it had been one or two decades ago and will probably in the future become a rarity.

A generation ago the common explanations for neurological disability were worms, teething, or constipation. Neurological knowledge has been greatly increased during this intervening period and the pendulum has swung to the opposite extreme so that the current explanation is something focal in the nervous system, and therefore probably curable by removal. This concept has followed the brilliant work of neurological surgeons and it has been fostered by the hope of surgical removal of tumors or repair of defects which previously received no rational treatment. The number of patients who fall into this surgically manageable group is relatively small, as you will clearly realize from a consideration of the preponderance of congenital malformations, infections, and degenerative diseases. I mention these matters in the hope that you will face neurological problems with common sense, for the present concept that almost all neurological illness is due to intracranial tumor is just as erroneous as was that of worms, teething, and constipation held during the last century.

There is not time to consider all categories of neurological disease, so we shall limit ourselves in the short time remaining to a discussion of a few disorders commonly seen and frequently confused.

There has been some misunderstanding about athetosis and chorea. Athetosis is due to an irregular hypertonus of muscle groups resulting in what Gowers termed "mobile spasm." It is characterized by slow writhing movements and curious postures of the limbs and hands. The fingers are often hyperextended at the metacarpophalangeal joints. The movements are always aggravated in force and amplitude when voluntary movement is attempted, likewise under the influence of emotion. There may be no associated signs of an upper motor neurone lesion, although these may exist with athetosis as in infantile hemiplegia.

On the other hand, in chorea the involuntary movements are commonly superimposed upon voluntary movements. When well developed they may also occur when the patient is at rest. They are jerky, incoordinate, and affect the limbs, trunk, and face. There is extreme hypotonia in contrast to the increase of tone in athetosis. There is also a marked degree of incoordination. The movements are very sudden and are usually an exaggeration of natural movement. With chorea there is also a disturbance of mental function, characterized especially by emotional instability. Chorea is usually seen in association with the various manifestations of rheumatic infection.

Another important distinction is that recovery is the common thing with chorea, whereas athetosis is persistent. The pathology of the two conditions is not absolutely known as is true of the pathology of many of the diseases of the basal ganglia, but in chorea there is an indefinite and diffuse involvement of the corpus striatum as well as of the dentate nuclei of the cerebellum and the superior cerebellar peduncle. There is good excuse for our having so little knowledge of the pathology of Sydenham's chorea since patients do not usually die of this disorder. On the other



hand, the lesions found with athetosis have extended from the cortex through the thalamus and striatum. In these cases it is difficult to attribute the athetosis of any specific lesion because of the usually associated cortical paralysis.

Consideration might also be given to the nature of poliomyelitis. As you know, this is an infectious disease which attacks the motor cells of the nervous system, most commonly the anterior horn cells of the spinal cord, less frequently the motor nuclei of the brain stem. The higher levels to the brain itself are not uncommonly affected. The usual manifestation neurologically is that due to a lower motor neurone lesion which means a flaccid paralysis followed by wasting of the muscles supplied by the motor segments which have been affected in the spinal cord or brain stem. Both in the early as well as in the late stage the reflexes are very weakly responsive or absent, usually the latter.

It should not be confused with spastic paralysis which is due to factors at work

before or during the birth of the child in most instances. It is usually not due to any infectious agent and the manifestations clinically are those of stiff, paralyzed limbs with exaggerated reflexes unless the spasticity is so great that a reflex cannot be elicited. It is interesting that, although in this instance the lesion is an upper motor neurone lesion, the signs which we mentioned before which are usually associated with an upper motor neurone lesion, namely, absence of abdominal reflexes and an extensor plantar response, are occasionally found to be normal.

These few notes will, I trust, help to make some of the neurological problems which are met in children more interesting and manageable, and with that the patient should receive more rational study and treatment. You will at the same time become better prepared and be able to contribute to the knowledge which we need to make neurology in children understood as well as it is in grown people.

# DIABETES MELLITUS—LOW INDEX OF SUSPICION, METHODS FOR CONTROL\*

HENRY CLAY LONG, M.D., Knoxville

Many scientists are engaged in research on some particular phase of diabetes mellitus. The discovery of protamine insulin by Hagedorn and the addition to it of zinc by Scott has simplified the treatment. The newer knowledge of the physiology of the endocrine glands, liver, and the autonomic nervous system has been important to an understanding of the regulating of the blood sugar. These studies have demonstrated that the intensity of the attack is influenced by the activity of the other endocrine glands. Joslin's contribution to the clinical study has been of great value.

Recent estimates, based upon the census and upon reports of insurance companies, indicate that there are 500,000 to 1,000,000 diabetics in the United States. In 1937 Joslin estimated the total number at 500,000 to 600,000. In 1939 the National Health Survey estimated the number at 660,000. These statistics do not include an equal or greater number who will develop the disease.

The death rate has increased rapidly during the past forty years, and more people are dying from diabetes today than at any time in the past.

The increasing incidence is indicated by the mortality statistics in the registration area of the United States. In 1880 the death rate was 2.8 per 100,000; in 1900 the rate increased to 9.7 per 100,000. Since 1900 the number of deaths has advanced rapidly and the rate for 1938 has gone up to 23.8 per 100,000.

## CAUSES OF DEATH IN ORDER OF FREQUENCY, 1937

1. Heart diseases (including diseases of the coronary arteries and angina pectoris).....	268.1
2. Influenza and pneumonia.....	114.5
3. Cancer.....	112
4. Cerebral hemorrhage.....	86.5
5. Nephritis.....	79.6
6. Tuberculosis (all forms).....	53.6
7. Motor vehicle accidents.....	30.7
8. Diabetes.....	23.7

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.

9. Arteriosclerosis.....	14.6
Diarrhea and enteritis.....	17.8
Typhoid fever.....	2.1

(Public Health Report 54:2058, November 17, 1939)

## DIABETIC MORTALITY—REGISTRATION AREA

Year	Number	Rate Per 100,000 Population
1890.....	1,089	5.5
1900.....	2,996	9.7
1910.....	8,040	14.9
1920.....	14,062	16.1
1930.....	28,600	22.4
1938.....	31,037	28.3

The mortality rate reflects very closely the incidence.

This increase has been interrupted by two periods: during the years 1910, 1911, 1912, and 1913 the death rate was nearly stationary and during the years 1915, 1916, 1917, 1918, and 1919 there was a decrease in the death rate. The former period was marked by low prices for farm products, low wages, unemployment, and a national monetary crisis; the latter by the tendency to eat less food during the World War; and the civilian population had less medical supervision. Joslin states that it is safe to predict that the death rate will continue to rise.

The increase in the number of cases cannot be explained by the publicity given to the disease following the discovery of insulin, by the advances in the science and practice of medicine, nor by the greater proportion of people who live to be in the middle and old-age groups.

There is a real increase in the disease, which in a great degree reflects the prosperity and laborsaving inventions of the past four decades. Dublin recently estimated that at the present rate of increase fifteen out of every thousand white males born will eventually die of diabetes and twenty-seven out of every thousand white females.

During the past six decades the death rate from "all causes" has fallen; however, included in these mortality rates are the degenerative diseases whose death rate is



increasing, as is the rate in diabetes. Diabetes, after the fortieth year, is usually classified as a degenerative disease.

Diabetes mellitus is primarily a disorder of the islands of Langerhans. A deficiency of the secretion of the islands is the immediate cause of the disease. Gross destruction of the insular tissue, by acute and chronic infections, and fibrosis accompanying the degenerative diseases are definite factors in decreasing the amount of insulin available for metabolism. Other factors which appear capable of decreasing the amount of insulin are: exhaustion of the cells, hyperactivity of certain endocrine glands which inhibit, neutralize, or in some way oppose the insular secretion. It has been recognized for years that the intensity of pre-existing diabetes is influenced by disease and the activity of other glands of internal secretion.

Allen has expressed the opinion that fibrous changes in the islands from acute blood-borne infections may be followed by diabetes months or years after the original injury.

Pincus and White found that diabetes occurred nearly seven times more frequently among the families of diabetics than in non-diabetic families. Their investigation indicated that a predisposition to diabetes is inherited as a mendelian recessive character. Joslin reports that 24.5 per cent of the patients in his studies gave a positive family history. It is estimated that one out of every four persons is a member of a diabetic family.

Obesity is the chief predisposing cause of diabetes. Statistics of clinics and insurance companies show that about eighty per cent have been overweight. An overabundance of food requires for its metabolism an unusual amount of insulin. It is reasonable to suppose that the long-sustained, excessive demands on the insular cells by the obese will finally result in their exhaustion. An overabundance of food and sedentary habits result in an increase in the number of people overweight.

Severe climatic disturbances have been mentioned as a predisposing cause by Mills and Peterson.

Lombard and Miner found the association of a nervous temperament to be next in importance to obesity in provoking the onset. Woodyatt lays emphasis on severe nervous shock, physical shock, and severe emotional disturbances as factors in the causation of diabetes.

The degenerative type of diabetes is a disease of middle-aged and elderly persons. Records from various clinics show that the onset in seventy per cent is after the fortieth year. Diabetes is to be suspected in the middle-aged who are obese.

RELATIVE ONSET BY DECADES

<i>Decade</i>	<i>Male</i>	<i>Female</i>
1 -----	3.59	3.22
2 -----	5.41	4.74
3 -----	7.48	4.73
4 -----	11.48	9.06
5 -----	21.24	20.69
6 -----	24.86	30.48
7 -----	18.18	19.90
8 -----	7.12	6.23
9 -----	.64	.95
Totals -----	100.00	100.00

Pincus, Joslin, and White.

The control of diabetes is a major health activity. A considerable number of the early and mild cases are discovered by life insurance examinations and by routine urine tests in the offices of the specialists on dermatology, ophthalmology, urology, and gynecology. The incidental discoveries of these diabetics constitute over fifty per cent of the writers' series. Patients who come to the doctor with the "cardinal symptoms," polyuria, polydipsia, and polyphagia, are rare. To discover and bring to the physician the large number of persons suffering from the disease and the prediabetics is a problem that challenges the medical profession.

The accumulated evidence is sufficient to attribute heredity as the chief factor in the production of diabetes. The control of this factor depends upon an extensive program of education. The person who has inherited a tendency to diabetes can delay or prevent the onset of the disease by avoiding overweight, infection, a sedentary life, and the

female repeated pregnancies. A diabetic person should marry a nondiabetic so that the chances of the offspring developing diabetes will not be great.

The next factor to be controlled in the order of importance is obesity, the most prevalent of the metabolic diseases. The avoidance and correction of this disorder likewise depends upon the education of the public. The maintenance of a normal weight must be stressed and overweight eliminated by a safe course of reduction.

The proper diet is still the most important measure in preventing or delaying the onset of diabetes. Explain to the patients, in simple terms, that a menu is not difficult to estimate, either by household measures or by the metric system with scales, when given lists of the various common foods classified in a practical way.

#### FOODS ARRANGED IN GROUPS ACCORDING TO APPROXIMATE CARBOHYDRATE CONTENTS

##### Five Per Cent

One to Three Per Cent	Three to Five Per Cent
Asparagus	Beans, string, young
Beet, greens	Broccoli
Celery	Cabbage
Cucumbers	Cauliflower
Endive	Eggplant
Lettuce	Peppers, green
Mushrooms	Radishes
Sauerkraut	Tomatoes
Spinach	Water cress
Swiss chard	

##### Ten Per Cent

Beans, string
Beets
Brussels sprouts
Carrots
Okra
Onions
Peas, very young
Pumpkin
Squash
Turnips

##### Fifteen Per Cent

Beans, lima, young
Parsnips
Peas

##### Twenty Per Cent

Beans, baked
Beans, lima
Beans, shell
Corn, green
Potatoes

#### FRUITS

##### Fresh or Canned (Water Packed)

Ten Per Cent	Fifteen Per Cent	Twenty Per Cent
Grapefruit	Peaches	Cherries, sweet
Strawberries	Pears	Figs
Watermelon	Raspberries	Bananas
Cantaloupe	Apricots	Prunes
Blackberries	Plums	
Honeydew melon	Pineapple	
Lemons	Apples	
Oranges	Blueberries	
Avocados		

A sample diet should be made for them to demonstrate that it is not a difficult feat.

#### DIET—CARBOHYDRATE FREE

First two days should clear urine of sugar in the mild and moderately severe diabetic.

Morning	Household Measures
Fruit, 10%	½ grapefruit
Eggs	2 eggs
Bacon	2 slices
Cream	2 tablespoonfuls
Coffee	1 cup

Noon	
Vegetables, 5%	As desired
Lean meat	1 slice 2" x 3" x ½"
Gelatin	½ cupful

Evening—The same as at noon.

Usually a test diet is given when the patient first comes under observation. A very simple one is one pint of whole milk to be given morning, noon, and evening. This will provide seventy-five grams carbohydrates, forty-five grams protein, and sixty grams of fat. The total value is 1,020 calories. If the urine is sugar free, gradually increasing amounts of carbohydrates, protein, and fats are added until a maintenance diet is taken.

#### DIET—LOW CARBOHYDRATE

Carbohydrate	75 grams
Protein	60 grams
Fat	50 grams
Calories	990

Morning	Household Measures
White bread	½ slice 3½" x 4" x ½"
Cooked oatmeal	¼ cup, scant
Fruit, 10%	8 sections orange
Eggs	2 medium sized
Milk	2 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ⅛"
Coffee (no sugar)	1 cupful

Noon	
White bread	½ slice 3½" x 4" x ½"
Vegetable, 5%	¾ cup string beans
Fruit, 10%	1 ⅓ cups berries
Lean meat	1 slice 3" x 5" x ½"
Cream, 19%	2 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ⅜"



*Evening*

White bread	1½ slice 3½" x 4" x ½"
Vegetable, 5%	¾ cup spinach
Vegetable, 10%	½ cup beets
Fruit, 5%	1 3 orange
Cottage cheese	4½ tablespoonfuls
Cream, 19%	2 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ⅝"

## DIET—MODERATE CARBOHYDRATE

Carbohydrate	105 grams
Protein	60 grams
Fat	70 grams
Calories	1,290

*Morning*

White bread	½ slice 3½" x 4" x ½"
Fruit, 10%	12 sections orange
Cereal (prepared)	4 5 cup cornflakes
Egg	1 medium sized
Bacon, crisp	6 slices 2" x 3" x ⅛"
Cream, 19%	2 tablespoonfuls
Coffee (no sugar)	As much as desired

*Noon*

White bread	1½ slice 3½" x 4" x ½"
Vegetable, 5%	1 1 3 cups string beans
Fruit, 10%	5 6 cup orange juice
Meat, medium, fat	1 slice 3" x 4" x ¾"
Cream, 19%	2 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ⅛"

*Evening*

White bread	½ slice 3½" x 4" x ½"
Vegetable, 5%	2 3 cup string beans
Vegetable, 10%	½ cup beets
Fruit, 10%	¼ cup berries
Cottage cheese	4½ tablespoonfuls
Cream, 19%	4 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ½"

## DIET—MAINTENANCE

Carbohydrate	150 grams
Protein	60 grams
Fat	100 grams
Calories	1,740

*Morning*

White bread	1 slice 3½" x 4" x ½"
Cereal (prepared)	4 5 cup cornflakes
Fruit, 10%	5 oz. orange juice
Bacon, crisp	1½ slices 2" x 3" x ⅛"
Eggs	2 medium sized
Cream, 19%	4 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ⅜"
Coffee (no sugar)	As much as desired

*Noon*

White bread	1 slice 3½" x 4" x ½"
Vegetable, 5%	2 3 cup string beans
Vegetable, 10%	½ cup beets
Fruit, 10%	10 sections orange
Potato	Size of an egg
Milk	5 6 cup
Meat, medium fat	1 slice 5" x 1" x ½"
Gelatin, plain	½ cup

*Evening*

White bread	1 slice 3½" x 4" x ½"
Vegetable soup	1 cup
Vegetable, 10%	½ cup beets
Fruit, 10%	10 sections orange
Milk	5 6 cup
Bacon, crisp	4 slices 2" x 3" x ⅛"
Cream, 19%	4 tablespoonfuls
Butter	1 square 1¼" x 1¼" x ½"

Patients with sugar in the urine on test diet containing less than seventy-five grams of carbohydrates obviously need insulin to permit an intake of food sufficient to support an active useful life.

The discovery of insulin by Banting and Best in 1921 was followed by attempts to find a method of prolonging the effect of insulin. This has been accomplished in an ingenious way by Hagedorn and Scott, who devised zinc protamine insulin. This modified insulin enables moderately severe diabetics to get along satisfactorily with one injection daily. Usually fifteen to forty units, once daily, will permit the patient to take sufficient food to maintain the proper weight.

With the carbohydrate content of the diet gradually increased to 150 grams, protein suitable to the age and weight and fat for maintenance, simplicity of treatment is assured. A supplementary dose of regular insulin may be necessary in severe diabetics.

## COMMENT

Diabetes as a cause of death can be eliminated to a great degree. Education of the physician and patient in the management and treatment of diabetes is necessary, for the day-by-day care devolves upon the patient or some member of the family. The few specialists in diseases of metabolism cannot treat them all. When the present knowledge of diabetes is widely disseminated and the methods of treatment employed in the best hospitals is universally used, a drastic reduction in the death rate will take place. The diabetic will live long enough to die of other causes.

The importance of education as a method of attack is receiving some recognition, articles on diabetes are appearing in the newspapers, magazines, on the radio, and in pamphlets for the information of the public.

In some of the larger cities diabetes associations have been organized to stimulate interest in the problem, and medical organizations are devoting more time to a consideration of diabetes.

Every diabetic patient should be instructed in the management of his disorder or some member of the family must accept the responsibility. Instructions, for one or two hours daily, can be given over a period of two to four weeks; in the calculation of the diet by weight or measurement, testing the urine for sugar and giving insulin when it is necessary. Arduous training and elaborate apparatus are not necessary. The family physician should study these simple measures and render adequate supervision to these patients who are able to do the routine work. Usually a specialist is available to assist him when complications arise.

The equipment is a test tube, Benedict's qualitative solution, a medicine dropper, a table of food values, and food scales are a great convenience, but household measures can be used.

Successful results cannot be obtained unless the patients are taught to live within their sugar tolerate at all times.

The administration of insulin when necessary must be given with sterile precautions. The patient or some member of the family should be instructed in the sterilization of the syringe and the rubber top of the insulin bottle, also the site of injection should be explained so that a different site may be used daily.

At first every specimen of urine should be tested for sugar. This is to be continued until the tolerance for carbohydrates is determined which will require about one month, then before each meal for several weeks or indefinitely if the diabetes is severe.

Education is even more important in the prevention of the disease. Mass education should be conducted by means of the press, radio, medical societies, the medical auxiliaries, and educators. The American Medical Association should appoint a committee for the control of diabetes, also the state societies as in the control of cancer.

The individual potentially susceptible to

diabetes should be taught measures which can delay or prevent the onset of the disease. A diabetic should not marry a diabetic, but select a life partner with care.

The diabetic death rate can be reduced and a high index of suspicion attained by a campaign of education to disseminate information to the public that will impress them with the importance of consulting their doctor, particularly those of the community who are overweight and who have blood relatives suffering from the disease.

The family physician must maintain a high standard in handling the problem. Urinary tests for sugar on specimens passed two hours after a full meal should be made on all suspected cases once or twice a year and on all children following an acute illness.

Since diabetes usually begins insidiously and about two-thirds of the cases are without symptoms, its detection depends upon a routine urinalysis on all patients by practitioners in all branches of medicine.

#### DISCUSSION

DR. R. C. DERIVAUX (Nashville): Doctor Long's paper is an able condensation of basic information into a terse summary, which, under an intriguing title, is presented as a plea for a more acute "awareness" of the diabetes around us, and closes with a sensible routine of procedure directed toward control and, correspondingly, toward an ultimate lowering of our present increasing mortality.

There is little question as to the increasing importance of diabetes as a cause of avoidable disability and death. In the United States, as a whole, deaths ascribed to diabetes now total about 31,000 annually, approximately the same number as those caused by automobile accidents, and an estimated current national incidence of about 660,000 cases is ranked by the United States Public Health Service as sixth among the causes of invalidism and sixteenth among the causes of chronic illness.

From the earlier estimate of Joslin of about 500,000 simultaneously living diabetics in the United States, one might infer an approximate general incidence rate of about four-tenths per cent of the national population and from which, assuming for the moment nationally homogeneous conditions, one might estimate that in Tennessee the total number of individuals having diabetes should be about 11,600, of whom 9,600 are white and 2,000 Negroes. Such an approximation accords fairly closely with our yearly diabetic deaths which, until



the past two years, occurred in a rather constant ratio of four white to one colored and in close parallel to the white to colored ratio in the composition of the Tennessee population. In 1939 and 1940 the ratio of white to colored deaths has been more nearly three to one, suggesting either a true increase in diabetic mortality among Negroes or else perhaps an increased accuracy in detection or certification.

These figures touch also, parenthetically, upon the question of the incidence of diabetes among Negroes, who have long been believed to possess some measure of relative nonsusceptibility. As seen in Tennessee at least, diabetes in Negroes differs in no respect either as to incidence or clinical manifestations from what obtains among whites, and it is to me not unlikely that we are dealing, in fact, with few if any Negroes, but more probably with a race whose admixture with varying degrees of white antecedence has lost for it whatever relative immunity it may have originally possessed.

Statistics of diabetic mortality can be misleading and I do not agree that diabetic mortality as recorded necessarily reflects diabetic incidence. When an elderly diabetic dies, it is likely that diabetes will be mentioned, and perhaps unduly prominently in his death certificate, possibly wrongly credited with having caused the death. In truth, we expect our diabetics to die *with* diabetes and the fact should be mentioned, but we deny their right to die *of* diabetes.

Doctor Long very properly notes that diabetes is often without leading symptoms, and he points out the necessity for a more alert "awareness" if it is to be diagnosed early and its progress restrained. In this admonition Joslin has been most energetically insistent for many years, and there is no doubt but that diabetes is being more efficiently found today because it is being more assiduously sought for.

Once diagnosed, suitable control routines may be applied by whatever method the individual practitioner may prefer. It may be remarked in passing that there are probably almost as many "methods" or systems available as there are physicians who use them and that most of them are good. Practically any method will succeed provided that it is a *method* and that it is *methodically* employed.

Dietary regulation is, of course, basic in its importance and should not be neglected. Which of the available insulins are to be employed and how they are to be used are matters for individual selection. Protamine zinc insulin is by far the most universally applicable and should be the insulin of first choice in most cases.

The most far-reaching new development in our knowledge of diabetes is the recently published experimental work of Best and his collaborators who,

working with dogs rendered diabetic by the injection of pituitary extracts, have demonstrated conclusively that insular regeneration is possible of accomplishment if, by the use of undernutrition or of low carbohydrate containing diets, functional rest of the remaining islet tissue is imposed.

If, to the experimental animal diets high in carbohydrate are fed during the course of the injections, the development of diabetes is certain. If, on the contrary, diets high in fat and low in carbohydrate are given, the animals have been found to be strikingly more resistant. Finally, if by the imposition of islet rest by the use of fasting or fat feeding and the administration of supplemental insulin, the development of the diabetic state is restrained, histologic evidence in the direction of recovery has been demonstrated. In other words, reduction of the functional strain may allow restoration of some of the exhausted cells, and if the damage be not too extensive, capacity for recovery may still be present to an appreciable degree.

Thus, for the first time, we are in a position of being able to look forward in an anticipatory sense toward gains which to now have been unattainable, and it is not beyond the bounds of possibility that the word *cure* may at some future time occur in our discussions.

From these considerations it follows that the earliest diagnosis and the earliest and most energetic institutions of regulatory measures, more especially in younger patients, are more important today than ever before; that a wider and freer use of insulin is as essential as is the avoidance of extremes in the formulation of our diabetic diets. It is indispensable that all of these things be done by more and increasingly "diabetes conscious" doctors if any statistical reflection of such a greater alertness is to be shown and if the "mass attack" for which Doctor Long's paper is so excellent an appeal is to be realized.

DR. HENRY CLAY LONG (closing): Doctor Derivaux is right in his conclusions that statistics are likely to be misleading. The specialists in diseases of metabolism treat so many cases of diabetes that their estimates may be too high. In recording vital statistics, it is the rule to list diabetes as the cause of death in all diabetics, except in other degenerative diseases, as heart disease. Conceding this to be true, diabetes is high in the list of the frequency of the causes of death.

The purpose of this discussion has been to create interest in the diabetic problem. The profession must be alert and work enthusiastically in the campaign to educate the public on the importance of seeking the doctor early and on measures to prevent the occurrence of the disease. This can be accomplished by an organization similar to that for the control of cancer.

# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

SEPTEMBER, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS  
RETAIN THEIR FREEDOM OF  
JUDGMENT IN THE MATTER  
OF MEDICAL CARE, OR SHALL  
THIS FREEDOM BE SURRENDERED  
TO SOME GOVERNMENTAL  
AGENCY?

## EDITORIAL

### THE PROBLEM OF TUBERCULOSIS

#### *The Interest of the Medical Profession in It*

It has long been recognized that any approach to the solution of the problem of tuberculosis must be broad in concept and in application. This is true because the pathology presented varies from a very simple inflammation in a lymphatic gland to an extensive destruction of a lung with large cavity formations. There is always the danger of giving overemphasis to some one phase of the problem and not enough emphasis to another, with the result that efforts fail to accomplish their purpose.

The Liaison Committee of the Tennessee State Medical Association made a report in 1936 to the House of Delegates, which report was adopted. In this report specific recommendations were made. This report

deserves repetition on the editorial page. It is as follows:

#### REPORT OF THE LIAISON COMMITTEE

"The Liaison Committee has had no complaint filed with it during the past year, and no matter has arisen in connection with public health matters on which it has been consulted by the State Board of Health.

"Our interpretation of the action of the House of Delegates last year with reference to the Liaison Committee is that this committee was continued to act as a connecting link between the profession and the State Board of Health and to have an advisory capacity in matters of public health.

"Acting on this interpretation we wish to bring to the attention of the House one of the most important public health problems in the state, namely, tuberculosis.

"There are 2,500 deaths per year in the state from this disease, and the Board of Health estimates that there are 25,000 cases in the state.

"The question of tuberculosis hospitals is agitated from time to time, as a means of handling this disease. In view of the above figures, it is manifestly impossible to provide anything approaching adequate hospital facilities. As a matter of fact, a few hospitals caring for a few hundred cases might be harmful by creating the feeling that adequate provision had been made for handling the disease. Some other approach must be made to the problem.

"In recent years it has been shown that many cases of this disease can be satisfactorily handled by collapsing the lung by means of pneumothorax. This is being carried out in some general hospitals where the patients are treated as outpatients after perhaps a few days' hospitalization. Some physicians are carrying out this treatment in the patient's home.

"There are many hospitals in the state adequately equipped with X-ray and laboratory facilities to make an accurate diagnosis of tuberculosis, and there are beds available in these hospitals for the short period of hospitalization that is sometimes necessary in this form of treatment. It is realized, of course, that all



cases of tuberculosis are not suitable for this treatment and that it has its limitations. However, many open cases can be converted into closed cases, with benefit to the patient and a reduction in the number of people exposed to infection.

"We believe if this form of treatment were in more general use it would be a definite step forward in the handling of this disease.

"With these facts in mind we wish to recommend to the House of Delegates that the Education Committee be requested to arrange for short courses in the diagnosis and handling of tuberculosis at points in the state where facilities are available, these courses to be open to any member of the state society who cares to attend. We believe that those men experienced in handling this disease would gladly give their services for such courses. The small expense necessary for printing and postage could be paid from the funds of the state society.

"As an example of what can be accomplished, in a general hospital, treating such cases as outpatients, the Nashville General Hospital Chest Clinic may be cited. In two years this clinic has had under treatment 200 cases of pulmonary tuberculosis. Many were in an advanced stage of the disease. Between forty and fifty cases were suitable for pneumothorax and are being successfully treated by this means. The percentage of early cases being found and treated is increasing so that in the future it is reasonable to expect a larger percentage of cases suitable for pneumothorax.

"These patients were of the average social and economic status of charity patients of a general hospital. They were treated as ambulatory outpatients after an average hospital stay of one week.

"It is reasonable to suppose that in private practice a larger number of cases suitable for pneumothorax would be found, with a corresponding increase in the number of open cases converted into closed cases, a lessening in the number of contacts, and great benefit to the individual patient.

"If the House of Delegates should act favorably on this recommendation, we feel that they should specify that such courses

are definitely a part of the educational program of the state society.

"Institutions should receive credit for participating, but, in our judgment, control of such courses if established should remain in the hands of the Education Committee of the state society."

There are several doctors over the state who are administering collapse therapy in their offices and in small hospitals, at their own expense without the slightest aid from any source.

These quite persistent, unsung efforts accomplish more than all the ballyhoo.

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### WELFARE

The term welfare is capable of being used in many different ways.

It certainly is true that the finest welfare movement ever inaugurated in the United States was the movement to secure the freedom of individuals. Out of that movement there came the Declaration of Independence which defined Americanism. Following that there came the Constitution of the United States.

As a result of all these steps in the movement for human freedom the highest form of human welfare was achieved. Social welfare was promoted because human freedom was promoted. Economic welfare was promoted because individual initiative and effort were rewarded. There remained poverty, of course, some of which was due to misfortune and a part of it due to indolence. Religious welfare was promoted because every person was free to worship according to the dictates of his own conscience. Educational welfare was promoted because literature was free and the individual was free to read and speak his mind.

There can be no doubt then that this was the greatest movement for human welfare the world ever witnessed. Since that time nearly every piece of legislation that has been enacted concludes with the phrase "the public welfare requiring it." This sentence is used regardless of the provisions of the bill enacted.

It is difficult at times to oppose successfully a legislative proposal presented in the name of human welfare. The time has

come, however, when there is need for the proponents of some measures and policies, presented in the name of welfare, to be required to give a better and more logical reason for their adoption.

It is high time that proposals in the name of welfare be subjected to a more critical analysis, both as regards their possibilities for good, and as regards their possibilities for harm, and with particular reference to the violence they may do to the one great major project in human welfare and without which there is no enduring welfare.

It is a very easy matter for some bureau or agency of the government to use the prestige which attaches to the office and the publicity which naturally emanates from a governmental agency to influence the public on some proposal in the name of welfare which at the same time disguises or conceals its possible effects on the major welfare.

It is becoming increasingly apparent that stress and anxiety are not the best things for the health of the people and these are becoming increasingly important as causes of illness and death.

It might serve a good purpose if a detailed breakdown of the expenditures of some departments of the state government for the purpose of making some appraisal of the good accomplished, and with particular reference to the point as to whether or not the good accomplished is commensurate with the expenditures made.

The public is too prone to conclude that when an appropriation has been made the good that was promised is well on the way.

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#### THE NEW DISEASE

American physicians must prepare to cope with a new disease. It is becoming generally prevalent and may reach epidemic proportions and severity. It is contagious, and attacks all without discrimination, including those who fill the ranks of the trades and the professions.

By virtue of their training, their ethics, the nature and the demands of their profession, doctors are especially susceptible to the contagion. Until it is better named,

the new disease can be called "War Fever." The future effectiveness of American medicine and the future status of the American doctor will be determined by the extent to which individual physicians are successful in immunizing themselves against the hysteria which is a symptom of and which always accompanies the disease.

The world is at war. One hundred and thirty million Americans are very much a part of this world. It is a wholly new kind of war. In times past, material advantages and territorial gains provided the incentive for wars of aggression. This is a war of ideological conquest. Material advantages and territorial gains are merely incidental to the larger purpose. It is an all-out warfare, spending lives and treasure on a scale never before contemplated or even imagined by man.

In the present situation there are too many uncertainties to enable either the wisest or the best informed reasonably to predict the extent to which it may be necessary to sacrifice the lives and material resources of this country in order to win this war. It is a known fact—and it should be faced—that we are in the process of mobilizing all of our energies and utilizing all of our resources for the accomplishment of this purpose.

It is almost needless to say that no group will be called upon to make a greater contribution than will be expected from the medical profession. It is needless to say that this contribution will be gladly, cheerfully made by American physicians. American doctors do not expect any special credit for the important service they are rendering or will be called upon to render. Their tradition, their training and experience make this attitude inevitable. Many are already enlisted for the duration. The rest will be ready when called.

However, the greatest national danger lies in the possibility of these doctors becoming victims of the "new disease." On them rests a new and most vital responsibility. It is of the utmost importance that these physicians ever keep in mind that the war itself is one of ideologies; that our first obligation and most difficult task is to preserve the priceless heritage of the Ameri-



can people that has set them over and above and apart from all the other people in the world. It is desirable to consider carrying the "four freedoms" to all the people in the world. But, it is essential that we maintain our own independence and freedom of action, "for what shall it profit a man, if he shall gain the whole world, and lose his own soul?" It is our task now to "hold fast that which is good."

Tomorrow will come the peace. While we unselfishly and unlimitedly serve, we should make sure that the stifling control of bureaucracy is not permanently established. We should take steps to insure the preservation of the sacred doctor-and-patient relationship, the independence of the physicians, the continued progress of American medicine and the safeguarding of the public interest.

Medicine's planning and administrative agency in these fields is the NATIONAL PHYSICIANS COMMITTEE FOR THE EXTENSION OF MEDICAL SERVICE, Pittsfield Building, Chicago, Illinois. It has demonstrated both its reliability and its effectiveness. In these times of increasing stress it should have the allegiance and financial support of every patriotic practicing physician. If your county association has not appointed an official committee to cooperate with National Physicians Committee, it should do so at the next regular meeting.

#### NATIONAL PHYSICIANS COMMITTEE.

#### \*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY

Robert Weller Creech	Memphis
J. W. Erwin	Blountville
William H. Ferguson	Memphis
Eugene W. Gadberry	Nashville
Carl N. Gessler	McMinnville
George Edward Gish	Memphis
Leslie Phillips Herd	Elizabethton
Harry H. Hudson	Cleveland
Harry M. Jenkins	Knoxville
Albert M. Jones	Memphis
Harry Douglas Jones	Nashville
Harvey M. Lowry	Memphis
Philip M. Markle	Memphis

\*Based on information published in *Journal of the American Medical Association*.

William T. McPeake, Jr.	Morris Chapel
Dick Donnelly Nave	Mountain City
Isaac James Newton	Nashville
Melvin Morris Simmons	Nashville
Otto Jay Swisher	Covington
Frank Valentine	Western State Hospital
Claude F. Varner	Memphis
Odon F. W. Von Werssowetz	Chattanooga
John Windiate Warren, Jr.	Memphis
Albert Weinstein**	Nashville
Bernard M. Weinstein	Nashville
William J. Witt	Memphis
Harold Vernon Woods	Nashville

\*\* Order revoked.

#### ORDERS REVOKED

Earl R. Donathan	Etowah
Irving R. Hillard	Jackson
Sol L. Lowenstein	Nashville
Samuel B. Prevo	Memphis

### NEWS NOTES AND COMMENTS

The Fourth Annual Forum on Allergy will meet in Detroit, Michigan, on January 10 and 11, 1942.

The United States Director of Civilian Defense has appointed the following Medical Advisory Board to assist the Medical Division of the Office of Civilian Defense:

Dr. George Baehr, New York, Chairman  
 Dr. Robin C. Buerki, Madison, Wisconsin  
 Dr. Elliott Cutler, Boston, Massachusetts  
 Dr. Oliver Kiel, Wichita Falls, Texas  
 Dr. Albert McCowan, Washington, D. C.  
 Dr. Fred Rankin, Lexington, Kentucky

#### CHANGE OF ADDRESS

H. H. Hudson, Cleveland, to 17285 Parkway, Memphis.

O. H. Clements, Palmer, Tennessee, to Bethesda Hospital, Oak Street and Reading Road, Cincinnati, Ohio.

W. W. Winters, Route No. 4, Nashville, to Western State Hospital, Bolivar.

C. E. McCarthy, Murfreesboro, to City Hospital, Columbus, Georgia.

Thos. G. Cranwell, Pine Breeze Sanitarium, Chattanooga, to Erlanger Hospital, Chattanooga.

Frank C. O'Connor, 210 Brookfield, Chattanooga, to 309 Chickamauga Avenue, Rossville, Georgia.

E. M. Peete, Metropolitan Life Insurance Company, to 1606 Shadowlawn, Memphis.

I. E. Phillips, Tazewell, Tennessee, to Worley, Kentucky.

Frank F. Ellis, Jr., Old Hickory, Tennessee, to Seventy-Ninth Field Artillery, Fort Bragg, North Carolina.

## MEDICAL SOCIETIES

### *Davidson County:*

The Nashville Academy of Medicine and Davidson County Medical Society held their first fall meeting on September 2. The following papers were read:

September 2—"Trichomas Infestation in Males," by Dr. Henry Carney. Discussed by Dr. D. W. Smith.

"Urinary Complications of Poliomyelitis," by Dr. Burnett Wright. Discussed by Dr. John M. Lee.

September 9—"Carcinoma of the Rectum," by Dr. L. W. Edwards. Discussed by Dr. W. C. Dixon.

"The Role of the County Medical Society in the Improvement of Birth and Death Registrations," by Dr. W. C. Williams, State Commissioner of Public Health.

### *Giles County:*

The Giles County Medical Society met on August 28, and had as its guest speaker Dr. R. H. Hutcheson, Assistant Commissioner of Health. His subject was "Registration of Vital Statistics."

Our next meeting will be September 25, 1941.

T. F. BOOTH, M.D., *Secretary*.

### *Hamilton County:*

Papers scheduled to be read:

October 2—"Biliary Surgery," by Dr. J. M. Higginbotham.

October 9—"Prostatic Hypertrophy," by Dr. Gilbert M. Roberts, Jr.

"Boeck's Sarcoid," by Dr. Paul H. Dietrich.

*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

A meeting of the society was held on August 26 in Waynesboro.

Dr. J. Allen Kennedy of Nashville read a paper on "The Practical Treatment of Cardiac Arrhythmias," and Dr. F. T. Billings, Jr., of Nashville, discussed "The Practical Treatment of Pneumonia."

The next meeting will be held on September 30.

### *Knox County:*

Knox County Medical Society was addressed in July by Dr. T. D. McKinney of Nashville, Tennessee. His subject was "Surgery of Intractable Disease."

In August the society was addressed by Dr. Robert Baker of Worcester, Massachusetts. His subject was "Tuberculosis and Pregnancy."

Dr. W. N. Lynn is confined at St. Marys Hospital seriously ill.

Dr. Tom Barry has recovered from a protracted illness and can give expert advice on neuritis.

Dr. Harry Jenkins has been called into service and will be located in Chattanooga, Tennessee.

R. B. WOOD, M.D., *Secretary*.

### *Robertson County:*

The Robertson County Medical Society met at the Robertson County Hospital Tuesday, July 15, in regular session. The following members were present: Drs. C. M. Banks, W. S. Rude, R. H. Elder, J. E. Wilkison, A. R. Kempf, W. P. Stone, R. D. Moore, R. L. Matthews, and J. S. Freeman. Visitors were Dr. Hiram A. Laws, Jr., Chattanooga, president of the Tennessee State Medical Association; Dr. Phineas Pitt, Ashland City; Dr. J. C. Pennington and Dr. W. O. Tirrill, Jr., of Nashville.

After dinner the floor was turned over to Dr. Laws, who spoke on "The Consolidation and Reorganization of County Medical Societies."

Dr. Stone, who sponsored the program, in turn introduced the guest speakers, Dr. Tirrill, who spoke on "Sterility," and Dr.

Pennington, on "Prostatic Hypertrophy." Discussion by Drs. Stone, Kempf, and Banks.

A letter was read by the secretary from Dr. W. W. Winters expressing his regret at not being able to be with us and announcing that he is now a member of the staff of the Western State Hospital, Bolivar.

There being no further business, the meeting adjourned.

JOHN S. FREEMAN, M.D., *Secretary*.

#### *Robertson County:*

The Robertson County Medical Society met August 19th, at the Robertson County Hospital. Those present were Drs. C. M. Banks, R. D. Moore, J. E. Wilkison, A. R. Kempf, and J. S. Freeman, Springfield. Visitors were Drs. J. M. Harris of Pleasant View; Henry Vomacka of Adairville, Kentucky, and Frazier Binns of Nashville.

After dinner there was a general discussion on reports of reorganization of societies. Following the discussion Dr. Wilkison, who sponsored the program, introduced Dr. Frazier Binns, who gave an interesting paper on "Poliomyelitis." The paper was discussed by Drs. Kempf, Harris, Moore, and Vomacka.

A motion was entertained to recommend that the state obtain the Watauga Sanitarium for a tuberculosis hospital.

JOHN S. FREEMAN, M.D., *Secretary*.

#### *Shelby County:*

The Memphis and Shelby County Medical Society met September 2, and the following papers were read:

"Addison's Disease," by Dr. J. L. Dies. Discussed by Drs. J. M. Davis and H. A. Sparr.

"Urologic Symptoms Associated with Pelvic Pathology," by Dr. W. T. Pride. Discussed by Drs. T. D. Moore and J. C. Ayres, Sr.

*Case Reports.*—"Thromboangiitis Obliterans," by Dr. L. L. Sebulsky.

"Diverticulitis," by Dr. A. B. Tripp.

#### *Sullivan-Johnson Counties:*

The Sullivan-Johnson County Medical Society met in Bristol September 2, at the General Shelby Hotel.

Dr. Hiram A. Laws, Jr., Chattanooga, president of the Tennessee State Medical Association, was an honor guest and read a prepared paper outlining the major objectives of the state society for the ensuing year.

Dr. George W. Leavell of Bristol, spoke upon the subject, "Pellagra—Its Associated Deficiencies and Nicotinic Acid Treatment."

Twenty-two members and three guests were present.

D. D. VANCE, M.D., *Secretary*.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

The Continuous Recording of Systolic Blood Pressure During Anesthesia. William Neff. *Anesthesia and Analgesia*, May-June, 1940.

A unit was built into a recording anesthetic machine that incorporated a combined optical and electrical mechanism that continuously registered the blood pressure during operative procedures. Two cuffs were used which were activated by an electrical mechanism which automatically maintained the systolic blood pressure level.

There are many instances when a continuous record is desirable. Changes may be studied during rectal, spinal, and intravenous anesthesia. Clinical studies of the respiratory and circulatory effects of vasopressor and vasodilator drugs may be made. It is the author's practice to deflate both cuffs after twenty minutes. About a five-minute or less rest period is allowed between inflations.



## FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

### The Indications and Complications with an Evaluation of Results Based on 5,500 Fever Sessions.

The author has treated a total of 567 patients with gonorrhea by fever therapy, these being divided into three main groups according to the type of treatment:

Group 1.—Patients had five-hour sessions of fever at 106-107 degrees Fahrenheit. Average number of fever sessions, 6.5; 352 treated (112, duration of gonorrhea one month; 166, duration one to six months; 74, duration over six months); and 304, adequate observation and treatment; 252, or 82.5 per cent, recovered.

Group 2.—Those who received sulfanilamide and failing to respond to this were given fever at 106-107 degrees Fahrenheit for five hours. Average number of fever sessions, 6.6; 42 treated (11, duration of gonorrhea one month; 23, duration one to six months; eight, duration over six months); 36 adequate observation and treatment; 26, or 72.2 per cent, recovered.

Group 3.—Those who received sulfanilamide or sulfapyridine and failing to respond were given ten-hour sessions of fever at 105-107 degrees Fahrenheit alone, or additional sulfanilamide or sulfapyridine with fever therapy. An average of 2.6 fever sessions were given per patient. In some instances where resistant arthritis was a complication, additional sessions of five hours' duration were given; 173 treated (98, duration of gonorrhea one month; 56, duration one to six months; 19, duration over six months); 165 adequate treatment and observation; 156, or 94.5 per cent, recovered.

Two hundred forty-one of these patients completed their treatment from one to five and a half years ago and thirty-four from three months to one year ago. Of the entire group of 275, nine, or 3.2 per cent, of the patients had a recurrence. An additional group of eleven cases, or 3.9 per cent, had what was considered to be a new infection.

### SYPHILIS

It can be said that fever therapy when combined with chemotherapy appears to be of value in the treatment of paresis, tabes dorsalis, asymptomatic neurosyphilis, acute syphilitic eye conditions, as iritis and the like, in cases of syphilis where the patient cannot tolerate arsenicals, and in ser-resistant syphilis.

We have treated seven men with venereal lympho-

granuloma with fever therapy and very satisfactory results were observed.

Fifty-three patients with various eye conditions, such as acute iritis, acute exudative choroiditis, interstia keratitis, optic atrophy, gonorrhea ophthalmia, corneal ulcers which have resisted usual forms of treatment, and sympathetic ophthalmia were treated. Very encouraging results have been observed in all of these conditions to date with the exception of optic atrophy due to syphilis.

In the arthritis group, sixty-two patients were treated who had acute infectious arthritis, chronic hypertrophic arthritis, and chronic infectious arthritis. The results in the acute groups have been encouraging, and in the chronic groups, good results were obtained in about one-third of the cases. In the remainder, only temporary, or no, relief was obtained.

Fever therapy should not be given to those who have severe debility, cardiac disease, hypertension, chronic nephritis, pulmonary tuberculosis, and the like. The contraindications have been compared to those of a major surgical operation. It is difficult to consider all possible contraindications, but, in general, one must study each individual case to determine the possible risk involved, and whether or not there is any condition present which will be aggravated by fever therapy, or result in death of the patient. This is a matter that can be decided only by the proper training of the personnel.

## INTERNAL MEDICINE

By R. B. WOOD, M.D.  
By D. R. THOMAS, M.D.  
Medical Arts Building, Knoxville

Phonocardiography and Its Clinical Correlation. H. Arenberg, M.D., New York. *Annals of Internal Medicine*, March, 1941.

After a study of 200 cases of the most common types of heart disease, which included simultaneous recording of heart sounds with the electrocardiogram, the author concludes:

1. Graphic recordings cannot replace the trained ear and the ear is more trustworthy, especially in short systolic murmurs of low intensity, and in the soft blowing diastolic murmurs of aortic insufficiency.
2. Sound tracings cannot distinguish between functional and organic murmurs.
3. They are of value in the third and fourth phase in the placing of extra heart sounds in their correct position.
4. They are of aid in training the ear to greater acuity.

5. They furnish a record that can be studied at leisure and supplement auscultation as a roentgenogram supplements fluoroscopy.

**Giardiasis and Its Treatment.** Howard R. Hartman, M.D., and Franklin A. Kyser, M.D. *Journal of American Medical Association*, Vol. 116, No. 26, June 28, 1941.

After a review of literature on giardiasis, the authors give a résumé of their experience with atabrine in 100 treated cases, giving credit to Baicalupo, who, in 1938, first reported its use. They conclude that in forty-six cases treated with atabrine thirty-five cases only were followed. Of this group all but one were freed of the organisms. Obtaining ninety-seven per cent efficiency in eradication and in thirteen cases reported in detail, having relieved them of their symptoms, they felt that atabrine might be considered a specific remedy and that in spite of textbook statements to the fact that giardia are not pathogenic, such could not be considered necessarily true in the light of their experience.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

**The Role of Deep Cauterization in the Prevention of Cancer of the Cervix.** B. Z. Cashman, M.D., Pittsburgh, Pennsylvania. *American Journal of Obstetrics and Gynecology*, 216-219, February, 1941.

Since the publication of Hunner's memorable paper in 1906, cauterization of the cervix for the treatment of chronic cervicitis has been practiced in our clinic.

Chronic cervicitis seems to be a contributing factor in the causation of carcinoma of the cervix. Cancer of the cervix is insidious in onset, and because of the late stages in which it is seen today, the prevention of cervicitis, the prevention of cancer by adequate treatment of existing cervicitis, and early diagnosis of this condition by periodic examination of women over twenty-five years of age offer the best solution of the problem.

In order to destroy infection in the cervix by cauterization, it is often necessary to cauterize deeply and extensively. Careful postoperative care is necessary to prevent stenosis of the cervical canal after deep cauterization. Deep cauterization of the cervix apparently was an effective method of preventing cancer in a series of 10,000 cases, for only two cases of cancer of the cervix are known to have occurred.

A follow-up study was carried out, but the average time interval after cauterization was only five

and six-tenths years, and the average age of the patient forty years. The results, therefore, fail to show any very marked reduction in the incidence of cancer in the group because, by a new application of statistics to the series of 3,143 patients who were followed up, Levin estimates the expected incidence as only six deaths from cancer of the uterus in the time observed. Two deaths are known to have occurred and one of these was from cancer of the cervix. Deep cauterization and subtotal hysterectomy has made total hysterectomy unnecessary for benign conditions of the uterus.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Further Studies of the Causes of Blindness in Louisiana.** H. F. Brewster. *American Journal of Ophthalmology*, July, 1941.

The percentages of the leading causes of blindness in 1,100 cases are: syphilis, 15; glaucoma, 11; congenital defects, 10; lacerations and burns, 5; senility, 4; gonorrhea, 4; hereditary diseases, 4; nongonorrheal pyogenic infections in infants, 4; gunshot wounds, 3; toxic poisoning, 3; consanguinity, 2; typhoid fever, 1.7; juvenile cataract, 1.7; meningitis, 1.6; trachoma, 1.6; diabetes, 1.4; and miscellaneous infections, 10.6. The author estimates that seventy-three per cent of this blindness was preventable.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

**Treatment of Advanced and Recurrent Carcinoma of the Breast.** W. S. Peck, H. K. Ransom, and F. J. Hodges. *American Journal of Roentgenological and Radiological Therapy*, Vol. 44, No. 6, p. 866, December, 1940.

Their observations may be summarized as follows:

Nine hundred twenty consecutive cases of breast carcinoma seen at the University of Michigan Hospital are reviewed.

Five hundred fourteen of these had had no previous treatment, and of these two-thirds were judged to be operable.

One hundred sixty-two cases had been treated by methods other than a radical operation. Of these, one-half were still judged to be operable.

Two hundred forty-four cases had had radical mastectomies previously. Of these, 74.1 had local recurrence or distant metastases.

Of the entire group of 920 cases, more than half were either inoperable on admission or were subsequently shown to have recurrent or metastatic lesions.

Irradiation is the most effective single agent in dealing with advanced and recurrent breast cancer.

In certain cases, mastectomy following irradiation will frequently improve the palliative result. These cases are usually operated purely to reduce the possibility of later having a sloughing malignant mass. They are not operated with the hope of effecting a cure.

Recurrences were rare in the older patients, with slowly growing carcinoma treated by mastectomy and irradiation.

Fortunately the occurrence of the inflammatory type of malignancy is relatively infrequent. It is best handled by intensive irradiation and surgery has little to offer these patients.

Bilateral primary carcinoma of the breast was found in .9 per cent of the cases. When primary carcinoma has metastasized to the opposite breast, the treatment should be conservative; for if this has occurred, other metastases have likely occurred.

Prophylactic castration is not advised for every patient who has had breast cancer and is still menstruating. Castration by irradiation is recommended when remote metastases or local recurrences have appeared and if the patient is menstruating.

Routine treatment of all demonstrable metastases is not recommended. However, lesions producing symptoms or causing disintegration in the weight-bearing skeletal system should be treated by irradiation.

### SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
1400 Monroe Avenue, Memphis

Adhesions from Hot Laparotomy Pads. F. E. Kredil, M.D., and H. G. Smithcy, M.D. *Surgery*, 10: 45 (July), 1941.

While most writers urge that laparotomy pads be kept warm enough to avoid cooling the peritoneum, only two were found who mentioned the fact that excessively hot pads may injure the peritoneum and cause postoperative adhesions. In experiments on dogs the effect of hot laparotomy pads was studied by applying these at various known temperatures to the abdominal viscera for

at least two minutes. These animals were sacrificed after intervals of from two to forty-nine days and the gross and microscopic findings studied. In five control animals, pads were applied to the viscera at body temperature (thirty-five to forty degrees centigrade) and no adhesions were found. When pads were applied at forty-five degrees centigrade, only one of the six dogs showed no signs of peritoneal injury, the others showing moderate to marked adhesions. Of eight dogs after laparotomy pads at fifty degrees centigrade, six showed massive adhesions and the other two moderate or slight adhesions. Higher temperatures produced more dense adhesions and one dog died of peritonitis. Not only the number, but also the density and firmness of adhesions were proportional to the temperature of the pads.

### MICROSCOPIC STUDIES

Only slight destruction of the serosa after forty-five-degree pads. After fifty degrees or more the small intestine was extensively denuded of serosa, and the subserosal tissues became attached to other raw surfaces or to omentum. An intense fibroblastic response took place in the adherent loops of bowel.

The authors contend that a pad at forty-five degrees centigrade does not feel warm to the gloved hand unless compressed to the gloved hands for some time, and one at fifty degrees centigrade feels comfortably warm after being held for fifteen seconds. Hence, they state that that pad feels hot for the delicate peritoneum by about five or ten degrees centigrade. It seems unlikely that moist pads at room temperature cause any local damage to the bowel. Excessively warm pads should not be used to hasten the return of circulation in determining the viability of a loop of intestine after release of strangulation since such tissue is more susceptible to thermal injury. If hot packs are used for hemostasis in the pelvis, gall-bladder region, or splenic, bed contact with the intestine should be avoided to prevent adhesions.

### UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Renal Pain: A Symptom in Acute Cystitis. Ralph L. Dourmashkin and A. Alfred Solomon. *Journal of Urology*, July, 1941.



Lewis, in his excellent review of the causes of renal pain, failed to mention acute cystitis as a factor, and a review of the literature shows that it is not considered as a cause of renal pain by other writers.

In acute cystitis the ureteral orifice and the intramural portion of the ureter become involved in the inflammatory process with consequent narrowing or complete closure of the lumen. This causes a retention of urine in the ureter and pelvis, resulting in renal pain just as in any other obstructive process.

The authors report a series of 160 cases with acute cystitis, twenty-four per cent of which had pain in the kidney region, occurrence frequent enough to merit much consideration. No cases with bladder-neck obstruction or neurogenic bladder with cystitis were included in this report. Cases of pyelocystitis, in which the catheterized kidney specimen contained pus and bacteria, also other cases with upper urinary tract pathology, were excluded.

The renal pain varied in intensity from dull, aching pain to severe attacks of renal colic. The pain usually comes on a day or two after the bladder symptoms develop, but may precede the bladder symptoms.

The diagnosis can be made by the bladder symptoms, such as dysuria, urgency, frequency, hematuria, etc., together with the absence of fever associated with the renal pain.

X-ray examinations and, when necessary, cystoscopic examinations, will rule out upper urinary tract pathology. Catheterization of the affected side will usually relieve the pain. There is but little danger to this since the use of the sulfonamide group of drugs.

## BOOK REVIEWS

*Essentials of Endocrinology.* Arthur Grollman, Ph.D., M.D. Published by J. B. Lippincott Company. Price, \$7.00.

The title of this book is not misleading. The "essentials" are there, not in massive detail, but sufficiently gathered to give the reader a knowledge

of the subject, both clinically and from the animal experimental side. The volume occupies a middle ground between texts with massive proportions and the small volumes limited to clinical pictures alone. It is sufficiently descriptive to give the reader a knowledge of any endocrinological subject he might desire for practical purposes.

Some diseases assigned by others to the field of internal secretions are omitted, others mentioned with doubt cast on the propriety of their inclusion—facts which impress the reader that the writer has a sane, practical conception of the whole field of endocrinology. The reviewer would like to recommend the volume.

R. B.W.

*New and Nonofficial Remedies, 1941*, containing descriptions of the articles which stand accepted by the Council of Pharmacy and Chemistry of the American Medical Association on January 1, 1941. Cloth. Price, postpaid, \$1.50; pp. 691, LXX. Chicago: American Medical Association, 1941.

"New and Nonofficial Remedies" is the book in which are described the medicinal preparations found by the Council on Pharmacy and Chemistry to be acceptable for the use of physicians. The book is cumulative; each year there are added the descriptions of products accepted during the foregoing year. Those taken off the market or found no longer worthy of continued acceptance are deleted. The book is at that time also revised to bring it up to date with the most recent medical thought. Until recent years the additions and deletions have about balanced. Recently, however, the bulk of the book has been increasing, and this year's volume represents the largest book of the more than thirty volumes that have been issued.

This year's new additions include the new sulfanilamide derivative, sulfathiazole, as well as sulfapyridine sodium; antipneumococcal serum of types I, II, III, V, VII, and VIII; human convalescent measles serum and human convalescent scarlet fever serum; and staphylococcus antitoxin. The field of endocrinology is represented by the addition of chorionic gonadotropin (follutein). The addition of shark-liver oil reflects the search for new sources of vitamins A and D caused by the cutting off of foreign cod-liver oil. Other newly accepted preparations are ampules of camphor, digilanid, and magnesium trisilicate.

The most extensive revision is represented by the rearrangement and amplification of the chapter, Serums and Vaccines. This chapter is now prefaced by a helpful index, an innovation in "New and Nonofficial Remedies." The chapter, Vitamins and Vitamin Preparations for Therapeutic and Prophylactic Use, has been revised to keep it abreast of the newer developments in this field.

Here, too, we find something of an innovation in the systematic use of graphic chemical formulas. It is understood that this practice will be extended to other parts of the book in future editions. Careful perusal will reveal minor revisions in many parts of the book made in the interest of greater clarity and in the effort to keep the book thoroughly up to date.



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# *The JOURNAL of the* **TENNESSEE** *STATE MEDICAL ASSOCIATION*

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## MEDICAL RELATIONSHIPS IN INDUSTRY\*

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American Medical Association, Chicago

It is convenient to classify physicians in industry according to whether preventive or remedial services preponderate in their ordinary activities, since under these headings occur most of the procedures from which individual workmen are likely to draw direct and immediate health benefits. At one end of the scale is the medically-trained industrial hygienist, most often associated with public-health administration. He is interested exclusively in the prevention of industrial disability and uses this interest, moreover, as an important avenue through which many of the problems of adult hygiene can be solved. His work affects groups rather than the personal-hygiene problems of individuals. Next there is the industrial physician engaged largely in the practice of preventive medicine and surgery within industry itself, but whose functions include also the treatment of accidents and diseases of occupational origin. As between the plant medical officer and the public health official, objectives differ only in the degree of detachment from conditions under observation and the amount of sustained personal interest which it is possible to develop in the health problems of the individual workers. Then there is the private practitioner, specialist or otherwise. Not a few of them have refused to

undertake any form of industrial activity. Much more commonly, however, he has been called upon by employers or insurance organizations to treat individual cases of industrial injury or disease. Up to the present time he has almost entirely overlooked industrial hygiene as a profitable extension of his own medical activity and as a means for positive contributions to the improved physical welfare of wage earners. It is no difficult concession to make, then, that physicians in each of these classifications have indispensable functions to perform for industry, that they should supplement and support each other and freely acknowledge their interdependence. The actual amount of medical activity which industry needs and which these varying types of physicians will be called upon to perform will vary considerably in keeping with local circumstances. What is of greater moment is that, as industrial medical activity expands, the work of physicians in each of these categories is certain to increase rather than otherwise.

In this connection it is interesting to classify some of the reasons why the private physician has neglected to participate more fully in accident and disease prevention and in the promotion of health programs for industrial workers. This attitude proceeds naturally from the way industrial medicine and surgery developed. At the outset interest was almost entirely centered upon

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\*Special address, read by title at the meeting of the Tennessee State Medical Association, Noel Hotel, Nashville, April 9, 1941.

problems of surgical repair and rehabilitation. A much more potent reason is that medical education has not been at all helpful in developing a real appreciation of the effects of occupation on health and the best means for establishing control. The amount of time necessarily spent in medical schools on individualized case study and management has prevented the assignment of sufficient attention to the principles of health conservation of groups and to the recognition and arrest of incipient disease which constitute, to a very considerable extent, the principal motivations behind the whole field of industrial health. Many physicians have intentionally withheld cooperation from the industrial health movement because of a real concern that adequate standards of medical practice could not be successfully transferred into the industrial picture because of industry's unwillingness or inability to support them. Physicians have had other misgivings about industrial medicine, such as the lack of essential qualifications of many who have undertaken this type of activity, its not infrequent status as exploited dispensary work under conditions where employer interest is too commonly interpreted as the proper function of an industrial medical service, and the methods used by some physicians to compete unfairly, not only in industrial practice, but in private practice through industrial connections. Another large contributor to distaste for certain phases of industrial practice relates to the varying nature of workmen's compensation administration, largely centering in the absence of qualified medical representation in, or advisory to, compensation commissions, the illogical limitations which have been set up in relation to medical and hospital care for industrial disability and in respect to free choice of physician.

Is it safe to assume, then, that in the light of these unsatisfactory experiences the practicing physician will be willing to improve and expand his participation in industrial medical activity? Such an expectation at the present time seems entirely justified. In the first place, the growing interest of the worker and his labor organizations is compelling industry, the government, and the medical profession to

investigate and recognize the important effects which occupation can have on physical well-being. The extension of workmen's compensation benefits in all but two states, particularly the assignment of benefits for occupational disease, is a most potent factor for the rapid expansion of professional interest. Johnstone has recently stated:

"Today twenty-two states make provision for all or some occupational diseases. Ominous signs indicate their rapid inclusion by the remaining states. After such enactments the responsibility shifts from a few to all physicians. The existing system of consigning the sudden fracture or laceration to the plant or company physician will continue. In such cases the causative factors are rarely in doubt. But the workman with insidious disease will consult his family or neighborhood physician, on whom will be imposed the duty of determining whether the patient's condition is occupational or nonoccupational in origin. In every city, hamlet, mining center, or farming district a workman's ill-health will become a medicolegal problem."

Present-day technical development in industry is enormous. Health hazards multiply so rapidly as to leave distinct gaps between recognition of the causative agency and the perfection of medical and engineering methods designed to cope with them. Progress will occur only as this lag is overcome by infusing all available knowledge about occupational health exposures into the practicing medical profession as promptly as possible. The rapid increase in governmental facilities, both federal and state, for investigation and control of occupational health exposures will assist greatly in this respect. All these agencies—manufacturers' associations, trade unions, insurance carriers, compensation and other governmental agencies—have great interest in establishing the social and humanitarian values of control over industrial accident and disease. Medical organization, therefore, has a constructive influence to exert on industrial medical standards, since no other agency is in good position to evaluate medical procedure or facilitate its direct application into actual practice. To accept



leadership in this field is directly in keeping with medical tradition in other specialties.

Added to these fundamental reasons for professional interest in industrial health are related problems of utmost importance associated with national defense. A recent editorial in *The Journal of the American Medical Association* has stated:

"Modern warfare depends on industrial production. The skilled worker becomes of importance equal to that of the man under arms; his indispensability grows as it becomes difficult or impossible to replace him. Shortages are said to exist now in certain classifications of experienced craftsmen. The problem then is not solely one of educating new workers, since long periods of apprenticeship are necessary to acquire dependable ability. More important is the task of guarding the existing supply of competent and skilled workers against preventable disability."

In relation to national defense, then, the real importance of industrial health assumes proper proportion. It is satisfying to realize that the medical profession will be much better prepared than it was twenty-five years ago to shoulder these added responsibilities, both under the pressure of preparedness as well as in wartime.

#### THE AMERICAN MEDICAL ASSOCIATION AND INDUSTRIAL HEALTH

There have been in the American Medical Association a number of agencies which over a period of years have been interested in or have made useful contributions to industrial health. This interest has not in any sense been limited to discussions of clinical industrial medicine, surgery, or hygiene—it has extended broadly into the related fields of medical economics, public relations, and social legislation. It has, however, become more and more apparent in recent years that a single agency in the structure of the American Medical Association, designed as a point of reference, discussion, and report on all matters affecting the health of the employed population, could perform a very useful service to the medical profession. It was for this reason that the Council on Industrial Health was established. In its make-up are representatives from the three major medical divisions nec-

essary to a complete industrial-health program—industrial hygiene, industrial practice, and private practice, both general and special.

#### ACTIVITIES IN STATE AND COUNTIES

Early in the development of the Council on Industrial Health, a policy was adopted regarding the relationship to the constituent state medical associations and the component county medical societies which make up the American Medical Association. A policy was adopted in the following terms:

"Contact should be made with the several state medical societies, urging them to create committees on industrial health which will proceed at once to study the problems in this field in their respective communities. The organization of committees should be extended as far as practicable to the county medical societies. These committees should be urged to investigate the present activities within their states of the several agencies interested in industrial health, as well as the proposals for industrial legislation which are being presented to various legislatures. Educational programs should also be sponsored under the auspices of these committees."

This method of taking advantage of the structures of organized medicine has already yielded interesting results. Earlier investigation had demonstrated that, while a fair percentage of states had formed committees to deal with limited aspects of industrial health, centralized responsibility was largely absent. Functions were distributed through several committees, all of whom might act independently on economic, ethical, or clinical matters. The evident need for coordination of activity has appealed to the majority of state medical associations. In the same fashion, the state committees attempt to develop cooperating committees in the industrial counties, all in the hope that the stated objectives of industrial health will be more rapidly realized.

#### THE INDUSTRIAL-HEALTH PROGRAM

The program of all these correlating committees in the county, state, and national organizations is identical. Activities have been widespread, but for purposes of this discussion can be classed under the three



main headings of investigation, correlation, and education. I should like briefly to discuss the first two of these activities and to elaborate somewhat on the subject of professional training.

*Investigation.*—By investigation is not meant the development or maintenance of scientific research, although it is not beyond possibility that a means for fostering original studies can on occasion be underwritten. It refers more closely to the need for inquiry into the details of industrial medical administration, and of relationships between the physician in industry, the employer, the employee, his fellow practitioners, and various agencies in the government and in the insurance field. A census has been taken of physicians specializing in or giving major attention to industrial practice on the assumption that little progress can be made until it is fairly well known who is engaged in the field and what services they are called upon to perform. A similar project along the line of census taking is to determine the essential health problems of specific industrial operations as the first step in the establishment of proper etiologic relationships between occupation and health. Then, too, the council has looked into the needs of the small industrial plant and is attempting to discover how the medical practitioner can bring to such establishments the value of industrial-health maintenance through physical examination, plant sanitation, control of hazardous materials and processes, and through health education of the worker.

*Correlation.*—In much the same way, it has been necessary to acquire and correlate information about the multitude of lay and professional organizations who have or ought to develop a constructive interest in industrial health. Much of this important field of professional and public relations has remained materially uncultivated awaiting proper medical leadership to awaken and sustain interest. There are, of course, many organizations which have made great contributions to industrial health—in these cases correlation is the means for conveying to the medical profession the advances made and the avoidance of duplication of effort as much as possible.

*Education.*—Important as these activities

are, most of the problems in the province of industrial practice must be solved through recourse to medical self-discipline or improved medical education. The chief function of all committees on industrial health must always be to bring to the physician a sense of the contribution which he can make to the physical betterment of workers and to guide him in the application of scientific and ethical medicine into industry. There are many opportunities for such professional training in meetings, postgraduate seminars, through a publication program, through the establishment of clearinghouses of information and similar activities.

The plain fact is that industrial medical training takes on unusual significance now, as a factor in preparedness. There are shortages in the number of physicians, chemists, engineers, and other professional groups skilled in industrial hygiene. This lack of trained personnel is the burden of a recent resolution passed by the Committee on Medical Preparedness of the American Medical Association, which has recommended to the National Defense Committee that necessary funds be furnished the United States Public Health Service in order that these shortages be corrected.

That these shortages exist lends force to the contention of the Council on Industrial Health that industrial health has been hampered in its development as a special field of medical interest through lack of opportunity for training both before and after graduation. Some of you are familiar with a recent review of industrial medical education recently published by the council which demonstrated among other things that:

1. Industrial or insurance practice affects almost every physician in general or special work and that he encounters these industrial problems very early in his career. Every physician needs a good introduction to this subject as an undergraduate.

2. Organized medical training is essential for medical graduates who wish to acquire competence in the technology of industrial hygiene. Furthermore, it is likely desirable that similar organized instruction be provided in industrial medicine and surgery and their subdivisions commonly encountered in industry—ophthalmology, dermatology, orthopedics, and others. The same is

true in regard to periods of controlled experience in an accredited industrial plant medical department.

3. It is entirely possible for medical schools and schools of public health to adjust the present medical curriculum so that a substantial amount of the time devoted to preventive medical teaching can be assigned to industrial health. We know that it can be done because some of the schools have and are already doing it.

To be sure, there are few precedents to follow either in the matter of length of time or course content necessary to turn out a finished industrial physician. As in all industrial programs, the real problems are what to teach and securing the means for enlisting suitable teaching talent and demonstration material. Work has already been

done on an outline and an expanded syllabus for a course in industrial health designed primarily for full-time industrial physicians, adaptable, however, to emergency needs, for the training of part-time industrial physicians under both university or state medical society guidance, for undergraduates, and for physicians in other classifications of industrial activity. If funds can be made available, it should not be difficult to improve and augment facilities for teaching.

These represent in part the present interest expressed by organized medicine in industrial health. When looked upon from the long view, there is good reason to expect that in the further development of industrial health medical responsibility will be properly represented.

## THE MANAGEMENT OF EARLY SYPHILIS\*

A. H. LANCASTER, M.D., Knoxville

Syphilis, as we know it today, dates back to the first homeward voyage of Columbus from the new world. Documentary records of that voyage reveal that one of his sailors developed the secondaries before landing in Europe. In the latter part of the fifteenth and the early part of the sixteenth centuries this disease received many names in different parts of Europe. But in a poem written by Frocastoros in 1533, he referred to a shepherd by the name of Syphilis infected with the disease, which was the beginning of the application of the name syphilis.

The protein manifestations of syphilis have stimulated the study of this malady from its beginning. But the discoveries announced from 1905 to 1912, in the brief span of seven years, threw more light on the proper management of the disease than discoveries of the previous three hundred years. It was Schaudin, in 1905, who discovered the spirochete of syphilis; Ehrlich, in 1909, who announced the discovery of arsphenamine "606," the most valuable drug in its control; Wassermann, in 1912, who gave us the valuable serological test which now bears his name. Too much cannot be said to eulogize the work of these three great scientists. The diagnostic discoveries announced by Schaudin and Wassermann, supplemented by tests perfected by others, have enabled us, by their proper application, to find evidence of syphilis in a high percentage of American people. The percentage of the population affected with syphilis varies in different sections of the United States, in different races, and in different social classes. It is no respecter of persons, and opportunity has presented itself now for us to learn that it infests both the hovel of the tramp and the palace of the rich. Today syphilis confronts us as a great social, economic, and medical problem. It is incumbent on us as a profession to carry on a war against the worst enemy of civilization.

This program can well be carried on by

a process of education of the present and future generations, by the careful application of our present diagnostic facilities, and by the faithful and energetic treatment of syphilis, particularly in its early stages.

In the years before the depression it was estimated that syphilis was costing the American people about five billion dollars annually. Of just how many people die annually from this disease we have no accurate records, for we as physicians know that we cannot believe the vital statistics reliable when it comes to syphilis, since we feel obligated to the family and, in a time of sorrow, try to save them from as much embarrassment and humiliation as possible.

It has been said by a prominent American physician that a specialist is one-seventeenth of a doctor. Whether we are one-seventeenth or seventeen-seventeenths of a doctor, we should be interested to the seventeenth extent that we can successfully perform our part in the campaign against this dread scourge. When we consider that eleven per cent of all admissions to insane institutions are a result of syphilis, we can readily see that the neurologist is interested; and when seventy-two per cent of pregnancies of the syphilitics do not go to full term, the obstetrician becomes interested. When seventy-one per cent of the children born of syphilitic mothers have syphilis, and the child incidence of syphilis based upon a wide variety of estimates is from two to five per cent, and the death rate of these is from eight to ten per cent, the pediatrician becomes interested.

Interstitial keratitis, optic atrophy, deafness, and the saddlenose, spiced with a chancre of his index finger from the manipulation in the mouth of an unsuspected syphilitic, add both professional and personal interest to the ophthalmologist and otolaryngologist. On a few rare occasions the surgeon's eyes have been opened by the incision of an aneurism. The radiologist has had his confidence in his ability to apply X-rays and radium successfully to cancers re-established by a correct diagnosis of gumma or chancre by the pathologist or

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\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.



serologist. Regardless of what specialty of medicine we practice we must have a professional interest in syphilis if we are to be of the most benefit to our patient.

Our patient can only receive the most benefit by an early diagnosis and adequate treatment; likewise by adequate treatment and proper control of the patient we can do our part towards reducing the spread of syphilis to a minimum. The management of a syphilitic patient to us as medical men is both an economic and a medical problem. The financial management of the case is a great problem, particularly in the last decade. Since even early syphilis should be treated at a minimum of fifteen to eighteen months, much of this time at weekly or bi-weekly intervals, unless we are on a cash or monthly pay basis the bill soon becomes so great that we lose both our bill and our patient. For this reason I am one who believes that the treatment should be divided into pay courses as well as courses of salvarsan, bismuth, and mercury. Most of us can well afford to handle a case of syphilis, provided the patient will pay a minimum of five dollars per week while under our care—which agreement, I think, is better than five dollars a shot.

When the unfortunate victim of syphilis trusts us with his case, there are certain recognized procedures that we should follow. Should he have a chancre and the dark-field examination reveals *treponema pallidum*, the blood for a Wassermann should be taken. Should the patient present a clinical chancre and a negative dark-field, a Wassermann should be taken, and then the patient instructed to cleanse the suspected lesion with water two or three times a day and if possible use a wet dressing of saline. The above procedures are necessary in order that we may determine whether the case is a primary seronegative or primary seropositive, both of which are considered a favorable stage in which to begin the treatment to effect a cure. All sick people like assurance, and assurance is part of the battle. Without offering a patient a reasonable amount of hope we should not expect his cooperation, which is so important in the successful management of syphilis. By instituting and continuing

the proper treatment in the primary stage I feel that we can expect a cure in more than ninety per cent of cases.

By a cure I mean a persistent and continued negative blood Wassermann, spinal fluid findings, and absence of clinical symptoms that can be definitely ascribed to syphilis. The patient frequently asks the question, "Doctor, can you cure me?" It is usually well to answer by saying, "You can only be cured by the administration of sufficient amount of the proper drugs and proper personal control. Now I can only administer what authorities say is a sufficient amount of proper drugs, and you must furnish the proper personal control." When he decides to go through with the treatment directed at a cure it is well to stress the abstinence, or at least temperance, in the use of alcoholic beverages, and moderation in the use of tobacco. The patient should have regular hours and get at least eight hours' sleep per day, be regular with his meals and try to watch his diet and avoid any foods that he knows do not agree with him, be prompt with his appointments for treatment, avoid exposure of other people to infection through drinking, kissing, and intercourse.

An arsenical is the drug of choice on which to start an early syphilitic, and often it is advisable to supplement this with insoluble bismuth. If the patient is a young individual in good health, other than syphilis, weighing above one hundred and thirty-five pounds, for males I give .6 gram neo or corresponding dose of some other arsenical, and if he weighs one hundred and fifty pounds, I use .75 gram neo. From such a dose it is well to expect a Herxheimer reaction which is synchronous in time with the greatest destruction of spirochetes, usually appearing within six to ten hours after injection, manifested by a chill, elevation of temperature, exaggeration of cutaneous manifestations, nausea, and other symptoms with which all of you are undoubtedly familiar. Expecting such reaction, it is well to give the original dose between 5:00 and 6:00 P.M. and to ask the patient to be in his room within three hours and go to bed as soon as he feels the first evidence of any reaction.

It is to be recommended that the arsenical be taken on an empty stomach, laxative the night before if possible. After the patient has had a few shots and you have had occasion to study him as an individual, frequently it is not necessary to disturb his method of eating, either in regard to amount or time. There are exceptions to all rules. It is advisable to give the second dose of arsenic four days after the first and at weekly intervals thereafter. A course varies with different writers, usually from eight to twelve. I most often give twelve the first course provided no contraindications arise. The time that I begin the administration of bismuth or mercury depends upon the type of preparations used. If it is an insoluble preparation, the first dose is administered on the day of the ninth arsenical and the patient receives both shots with the tenth, eleventh, and twelfth; in this way a therapeutic amount is being liberated by the time the last arsenical is given. On the other hand if an insoluble preparation of bismuth or mercury, particularly mercury, is started one week following the last arsenical, a few weeks have elapsed before the patient is receiving the therapeutic response needed. Following a course of insoluble preparation of bismuth or mercury the patient can have a rest of two weeks from injections and still be receiving a sufficient bismuth and mercury therapy. A short vacation like this often stimulates cooperation. But I am of the opinion that in early syphilis, particularly early in the treatment, a soluble preparation of bismuth is to be preferred over mercury in any form and over an insoluble preparation of bismuth, due to the fact that it is a good spirocheticidal agent readily absorbed, rapidly eliminated, and the amount of usable bismuth can be kept at a more uniform level by frequent administration.

Often it is advisable to give both an arsenical and the bismuth preparation at the same visit, particularly if the patient comes from a considerable distance. After a course of twelve shots of each, he may remain away from the office for four to six weeks, using mercury inunctions, an old and tried remedy, and a very effective meth-

od of administering mercury. Of course he must be warned of the toxic symptoms of mercury and asked to return immediately if in doubt. I do not believe that any primary seronegative case of syphilis should receive less than forty arsenicals and a proportionate amount of bismuth or mercury provided no contraindications arise, and I am also of the opinion that such amount should be administered to a primary seropositive case after the Wassermann has become reversed. Such treatment by some would be considered more than adequate, but I had rather give a few shots more than is necessary for a cure than to give one too few. But, of course, we should not forget our patient, keeping in mind that arsenicals have a tendency to do damage to the liver, skin, and nerve tissue, and that mercury affects the gastrointestinal tract as is manifested by stomatitis and colitis, and also the genitourinary tract as evidenced by symptoms of nephritis.

A Wassermann should be taken at frequent intervals early in the treatment to determine the response to treatment, and at intervals further spaced as treatment is continued. A spinal puncture should be done at the completion of the first course of arsenicals. A puncture done early in syphilis, when the tissues are saturated with spirochetes, is dangerous in that the needle point may carry organisms into the spinal canal.

It is not advisable to discontinue treatment as soon as the Wassermann becomes negative and wait for a positive Wassermann before resuming treatment again. The practice of such procedure will effect very few cures, and such treatment is responsible for the lack of confidence in modern antisyphilitic drugs. Waiting for the return of a positive Wassermann is an excellent way to get a Wassermann fast case. If we would treat to cure and not just to get a serological negative condition, many patients would be cured. I have frequently remarked that should I get syphilis, I would take as a minimum the treatment as previously recommended after my Wassermann had become negative and, after completion of treatment, have a complete checkup and if no evidence of syphilis could be found,



feel that I was one of the fortunate unfortunate.

The question is continuously before us as to the arsenical of choice. I am still of the opinion that old salvarsan or "606" is the best antiluetic drug available, particularly so for clinic practice, but the complicated technic of preparation for administration makes it impractical for most offices. For years nearsphenamine has occupied second place among the arsenicals, but now this product is being seriously challenged by mapharsen, which is undoubtedly the least toxic of all arsenicals used in the treatment of early syphilis. Other arsenical preparations that have a definite place are silver salvarsan and sulfarsphenamine, the latter possibly the poorest of all arsenicals but useful in selected cases where the administrator is unable to find the vein. Bismarsen, a combination of both bismuth and arsenic, is apparently losing the favorable position that it occupied a few years ago.

Bismuth is the second best antiluetic drug that we possess. Bismuth salicylate, an insoluble preparation, is very popular in that it meets the demand for weekly administration, but objectional in that it is

slowly absorbed, the accumulating effects at times resulting in toxicity. We should not expect the maximum utilization from bismuth salicylate under three or four weeks from the start of its weekly administration. If we expect quick effect from bismuth therapy, we should use a soluble preparation of bismuth. Several good preparations are on the market, such as potassium sodium bismuth tartrate, sodium bismuth tartrate, iodiobismutol, bismuth succinimide, and numerous other preparations. We should administer ninety to 120 milligrams of metallic bismuth weekly to expect optimal benefit from bismuth medication.

Mercury, the oldest drug in years of experience in syphilis, is not as popular as at one time, but still a valuable antiluetic drug and is available in both soluble and insoluble forms. It has one advantage, and that is, it can be given by inunctions.

In summarizing, I am of the opinion that all cases of early syphilis should have at least thirty arsenicals the first twelve months and do not spare bismuth and mercury during this period. A plan that I favor and believe good for early syphilis is as follows:

<i>Time</i>	<i>Neo</i>	<i>Bi. Sl.</i>	<i>Comment</i>
1st day	.45 to .75		If mapharsen is used, I prefer to give it every five days and accompany it with two cubic centimeters of three per cent sodium bismuth tartrate if arsphenamine dose is .3 to .5 gram weekly.
4th day	.45 to .75		
11th day	.6 to .75		
4th week	.6 to .75		
5th week	.6 to .75		Blood Wassermann if primary seronegative before giving seventh arsenical.
6th week	.6 to .75		
7th week	.6 to .75		
8th week	.6 to .75		
9th week	.6 to .75	90 to 120 mg.	Blood Wassermann—spinal fluid examination.
10th week	.6 to .75	90 to 120 mg.	
11th week	.6 to .75	90 to 120 mg.	
12th week	.6 to .75	90 to 120 mg.	
13th week		90 to 120 mg.	
14th week		90 to 120 mg.	
15th week		90 to 120 mg.	
16th week		90 to 120 mg.	
17th week	.6 to .75		
18th week	.6 to .75		
19th week	.6 to .75		
20th week	.6 to .75		
21st week	.6 to .75		
22nd week	.6 to .75		
23rd week	.6 to .75		



24th week	.6 to .75	
25th week	.6 to .75	
26th week	.6 to .75	90 to 120 mg.
27th week	.6 to .75	90 to 120 mg.
28th week	.6 to .75	90 to 120 mg.
29th week		90 to 120 mg.
30th week		90 to 120 mg.
31st week		90 to 120 mg.
32nd week		90 to 120 mg.
33rd week		90 to 120 mg.
34th week	.6 to .75	
35th week	.6 to .75	
36th week	.6 to .75	
37th week	.6 to .75	
38th week	.6 to .75	
39th week	.6 to .75	
40th week	.6 to .75	
41st week	.6 to .75	
42nd week	.6 to .75	90 to 120 mg.
43rd week	.6 to .75	90 to 120 mg.
44th week		90 to 120 mg.
45th week		90 to 120 mg.
46th week		90 to 120 mg.
47th week		90 to 120 mg.
48th week		90 to 120 mg.
49th week		90 to 120 mg.
50th week		90 to 120 mg.
51st week		90 to 120 mg.
52nd week	.6	
53rd week	.6	
54th week	.6	
55th week	.6	
56th week	.6	
57th week	.6	
58th week	.6	Hg. Sl. grains 1 to 1½
59th week	.6	Hg. Sl. grains 1 to 1½
60th week		Hg. Sl. grains 1 to 1½
61st week		Hg. Sl. grains 1 to 1½
62nd week		Hg. Sl. grains 1 to 1½
63rd week		Hg. Sl. grains 1 to 1½
64th week		Hg. Sl. grains 1 to 1½
65th week		Hg. Sl. grains 1 to 1½
66th week		Hg. Sl. grains 1 to 1½
67th week		Hg. Sl. grains 1 to 1½

42 arsenicals

26 bismuth salicylate

10 mercury salicylate

68th week	.6
69th week	.6
70th week	.6
71st week	.6
72nd week	.6
73rd week	.6

If soluble preparation of bismuth is used, it should be administered two or three times a week.

Blood Wassermann.

If the case was primary seronegative, spinal fluid and Wassermann never becoming positive, treatment may be discontinued and blood Wassermann taken every three months for first year, every four months for second year, and every six months thereafter for five years. If patient remains clinically and serologically negative for five years, we may feel reasonably sure of a cure.

74th week	.6	90 to 120 mg.
75th week	.6	90 to 120 mg.
76th week		90 to 120 mg.
77th week		90 to 120 mg.
78th week		90 to 120 mg.
79th week		90 to 120 mg.
80th week		90 to 120 mg.
81st week		90 to 120 mg.
82nd week		90 to 120 mg.
83rd week		90 to 120 mg.
84th week	.6	
85th week	.6	
86th week	.6	
87th week	.6	
88th week	.6	
89th week	.6	
90th week	.6	90 to 120 mg.
91st week	.6	90 to 120 mg.
92nd week		90 to 120 mg.
93rd week		90 to 120 mg.
94th week		90 to 120 mg.
95th week		90 to 120 mg.
96th week		90 to 120 mg.
97th week		90 to 120 mg.
98th week		90 to 120 mg.
99th week		90 to 120 mg.
100th week		90 to 120 mg.
101st week		90 to 120 mg.

If patient was primary seropositive but has been clinically and seronegative since twelfth week of treatment, we may discontinue treatment with same comment as of seroprimary patient at end of sixty-seventh week.

To this point the patient has received fifty-six arsenicals, forty-eight bismuth, and ten mercury, and if he is not cured of syphilis, he becomes the problem of an individual patient and should have a complete neurological and cardiovascular examination, and treated accordingly.

In closing I want to emphasize the following points:

(1) We should keep our index of suspicion high and use all available facilities to establish early and accurate diagnosis.

(2) We should advise our patients to be regular for treatments and do our best to encourage them to take treatment directed at a cure.

(3) If treatment is started during the first six months of infection and continued for two years and a serological cure is not obtained, the patient becomes an individual case and should be handled as such, in order that he may not become a morbid victim of late syphilis.

#### DISCUSSION

DR. HORACE C. GAYDEN (Nashville): Mr. Chairman, Gentlemen of the Tennessee State Medical Association: Dr. Lancaster's paper was so thorough and so extensive that I don't feel there is anything new to be added to it. I merely want to emphasize some of the points that he has already mentioned.

He went into the history of syphilis. It is the

only disease with a written history of a definite date, which, as he said, was the return of Christopher Columbus from the New World to Barcelona in 1493. The following year, Charles VIII of France invaded Italy and established himself in Naples. It was an easy capture, almost a promenade for his troops, and they indulged in riotous living for the next two or three years, until in 1495 when it got so bad the Neapolitans more or less drove them out and they were scattered all throughout Europe. An epidemic of the most severe nature followed. This I hate to admit, because I was always American enough to hope that one of Osler's earlier writings was correct, in which he stated that Charles VIII carried syphilis from France across the Alps and down into Italy where he syphilized everything in Italy from the Pope on his throne to the lowest plebeian. But it can be seen how the disease was brought back at a definite date, as the doctor said, from this hemisphere on a ship and was known at that time as the Haitian disease or the disease from Peru, and bones have been found buried in various places on which it has been attempted to establish syphilis in all the various nations. It was known as the French disease, the Italian disease, the Spanish disease; they could trace it back to the Chinese because they found a great many nodules on the bones and they

thought it went back into prehistoric times, but the Japanese, who lived near by and were in a position to know, disproved this. Syphilis did not come to Japan until about 1800 and something, and it should not have been difficult to go from China to Japan. Japan was one of the late nations to get syphilis.

It derived its name from a poem written by one of the early writers about a tender of sheep, a shepherd, who broke out with this awful epidemic disease. It is said in a poetic nature (there is the romance connected with syphilis) that this man's name was Syphilis, and that is the way the name was derived.

Dr. Lancaster has called attention to the early writings of Schaudin and Hoffman and the discoveries of 1905, Ehrlich's famous discovery in 1909, and Wassermann's in 1912. You will notice that right there in the twentieth century more work was done on syphilis than in all the three or four hundred years previous. Those things have been invaluable in our means of treating syphilis.

He mentions the cost of syphilis. The cost of syphilis in inability to work, time lost, and the number of deaths there is no means of determining.

It affects any and all branches of medicine. It was said by Osler: "If you are interested in syphilis, if you know syphilis in all its manifestations, you also know medicine." Consequently, all of us doctors should equip ourselves to be thoroughly interested and able to treat syphilis and stop so many patients who go to a clinic where they treat six and seven hundred people and they can't take time or haven't the inclination to take the personal side of the patient into consideration. If we are anything, we are doctors, and we will stop a great many people from committing suicide or jumping off a bridge because of ill-health.

Dr. Lancaster speaks of the medical economic problem and says that we can all afford to treat syphilis for five dollars a week. We should afford to treat it for any price. You don't have a set price for appendicitis, particularly; you size up the situation that fits that particular patient.

Hastening through, a dark field should be done on all patients, and a Wassermann, as soon as possible, in order to show you what you are doing. Any suspicious sores should require a dark field, and it is a very simple technic to learn.

Dr. Lancaster is correct in telling a patient that he can be cured. Who else is going to tell him that he can be cured if you do not? He comes to you not only for medical advice but for encouragement. Tell him also, right at the beginning, that it will take two years or eighteen months, and he will not be disappointed.

As you go along through treatment, don't be in too big a hurry to get a Wassermann, because if you do, it will come back, as he showed you in two cases, positive in spite of treatment.

The patient is either satisfied or knows too much about his case. The old doctors didn't tell them

everything that happened and they got along fine. We have to tell them every drug they get and how many they are going to get. It isn't necessary.

There is nothing new about the arsenicals and the heavy metals, with probably the introduction of mapharsen. Give plenty of them. Give instructions to your patient as to food, bowels, and things like that. Check up the Wassermann and spinal punctures late, for there is no big rush about it.

Here is a pamphlet coming from the Public Health Service entitled "Syphilis" which is of a great deal of benefit and help to you in instructing your patient, and I think, if we would let them help us more instead of treating so many, we would be better off.

DR. HOWARD KING (Nashville): Mr. Chairman and Members of the Association: I feel that the paper which Doctor Lancaster has presented to you is one of the most valuable, perhaps, to come before this association. However, there is just one point of comment I especially wish to make. As you know, within the last three to five years in the state of Tennessee, as well as all over the nation, an attempt has been made to standardize a method of treatment of not only early but late syphilis. Doctor Lancaster has very graphically presented to you the latest method in the handling of early syphilis. In spite of that, in the past three years, I can look back and count as many as ten cases of patients who were being more or less ideally treated, strictly following this plan, and yet these same patients turned up with some very definite relapsing secondary syphilis. In two of the instances they turned up showing gummata right in the midst of the treatment.

What did that mean? I think that meant that the particular individual had more or less grown arsphenamine-fast or was failing to respond very well either to arsenic or bismuth, and I am referring, of course, to the arsenic and bismuth program.

Of course, we should recognize those things and remember that not every patient in the world is going to respond to any one program of treatment, and thus not keep on treating the patient in that same old routine. All ten of these patients which I have seen were cleared up by old-fashioned drugs, iodide of potash and mercury.

In two of the instances of these patients who had relapsing secondaries, they were also given another plan; they were placed in the heat box, the temperature was raised to 105 or 106, and then, while they had this elevation of temperature, they were given some of the arsphenamines. In another instance, after treating with mercury and iodides and staying off the regular program for a few days, this same patient was started back on what I would call the Ormsby plan of giving arsphenamine; that is, giving small doses of the arsphenamines every three to four days, establishing, so to speak, a different phase of reaction to the arsphenamine.



mines rather than giving a large dose once a week. They all responded.

DR. A. H. LANCASTER (closing): The treatment of resistant syphilis has become a serious problem. I have seen more cases of treatment-resistant syphilis in the past three years than in the previous twelve years, although in the last three years I have not seen so much syphilis as during any three years in the previous twelve. We had about 500 new cases a year in the clinic and only one case of treatment-resistant syphilis in six years. I believe we are inviting treatment-resistant syphilis by starting our patients on small doses and spending several weeks stepping the dosage up to maximum.

When Ehrlich gave us salvarsan, he warned us that if we gave small doses we were inviting an arsenic-resistant type of spirochete. In a healthy individual, as previously stated, I do not fear the Herxheimer reaction and believe that it is valuable. Rarely do we have arsenical dermatitis with the first dose. I grant that arsenic is toxic and that we shoulder a responsibility with every patient that we treat, a responsibility not only for the

treatment of the syphilis, but for some toxic manifestation from the heavy metals.

The spirochete has about made a recovery from the arsenic on the fifth day; hence, to those patients showing treatment-resistant syphilis, I think we should give a large dose of arsenic, provided they will tolerate it, every four days. Indeed I have my doubts if .3 gram of neoarsphenamine is of any particular value to these patients.

A very interesting accident happened to one of the service cases. An intern was requested to give .03 gram mapharsen; with the aid of another intern he was able to calculate the dose of .03 gram neoarsphenamine. With this single injection the patient developed an exfoliative dermatitis and was in the hospital for three weeks. After recovering from the arsenical dermatitis, patch test showed the patient still sensitive to neo, but not sensitive to mapharsen; therefore, we began small doses of mapharsen, and in a period of seven weeks had worked this patient up to the point he could tolerate .06 gram of mapharsen without any toxic manifestations whatever. Therefore, it would appear that in mapharsen we have an extremely valuable drug to use for patients who do not tolerate the other arsenical.

## CARCINOMA OF THE RECTUM\*

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Carcinoma of the rectum occurs more frequently than generally thought. It is no more frequent than heretofore, except that more people live to the so-called cancer age, and improved diagnostic technic, plus more lay cancer consciousness, has produced an earlier, higher percentage and more accurate diagnosis. Carcinoma of the rectum deserves more serious attention than it is getting at the present time. The literature is replete with reports, discussions, operation procedures, etc., but these are taken lightly or are controversial, and the readers too seldom deep-down appreciate the problem of this malignant growth. Far too seldom anything is done about it.

A comprehensive discussion of carcinoma of the rectum is not possible in this brief presentation. It is hoped only to present the more salient features and to emphasize again the need for more conscientious determination to give our patients more return for their faith in this profession and an increased yield of cures. If carcinoma of the rectum is suspected by the first physician whom the patient consults, the majority of these growths can be resected widely with a reasonable expectation of complete eradication of the disease.

Malignant lesions of the large bowel are relatively frequent, and of these more than sixty per cent occur in the rectum. Carcinoma of the rectum ranks fourth in frequency of location, surpassed only by the uterine cervix, breast, and stomach. This means that in the male it is second most common. It is estimated that about twelve per cent of carcinoma of the entire body occur in the anus, rectum, or sigmoid colon. The relative sex incidence corresponds in a general way to carcinoma elsewhere, though this, too, is of little importance, since it behooves us to be on the lookout regardless of age. Between two and five per cent are found in patients under thirty years. There is no predilection for a particular wall of the rectum, and ninety to ninety-five per cent can be palpated, should be diagnosed by rectal digital examination.

The etiology of carcinoma of the rectum, much as malignant tumors elsewhere, is essentially unknown. Time and space will not permit elucidation of hypotheses or proved contributing factors in its origin. Moreover, these are irrelevant. We must concern and devote ourselves primarily to the early diagnosis and proper treatment. Extrinsic factors, as proctitis and chronic irritations by heat, chemicals, and escharotics, perhaps have played a part in a small per cent of cases. It is thought that carcinoma of the large bowel, as a whole, is more frequent following or with ulcerative colitis than by chance occurrence alone.

Rectal polyps, and particularly adenomas, must be looked upon as definite so-called precancerous growths. In fact, malignant changes in adenomas are frequent, and they should be treated accordingly. The heredity factor in carcinoma of the entire large bowel seems to lie in the familial adenoma tendency.

The symptoms of carcinoma of the rectum are known well, though often there is misunderstanding as regards relative importance. Unfortunately, there are no early pathognomonic complaints or signs; in fact, a growth usually is present for several weeks before the most-observing patient has any indication of its presence. Pain is not an early symptom, and the much-talked-of alternates, constipation and diarrhea, are not frequent, and they occur late, the result of partial obstruction. Any change in bowel habits, and these may be slight, should make one suspicious. Rectal discomfort, a feeling of pressure or of weight, and the presence of blood in the stool are the most important early symptoms. They demand thorough investigation. Early-morning diarrhea and slowly-progressive constipation are next in line. Larger tumors or annular growths of longer duration produce obstruction, mucus in the stools, often a peculiar fetid odor, and dysfunction symptoms of the bladder or pain in the sacral region. The late symptoms and findings are those of anemia, loss of weight and strength, and cachexia, which are well known and usually

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indicate metastatic dissemination of the growth.

One can realize readily the need for earlier diagnosis and more thorough examination and treatment if it is appreciated that the average duration of symptoms of operable carcinomas of the rectum is from nine to ten months and the inoperable thirteen to fourteen months. This does not take into consideration that the growths probably are present for several weeks before initial symptoms. These tend to emphasize the slow growth and late metastases. Delay by the physician in making a digital examination is one of the chief factors contributing to this late diagnosis and to poor prognosis of carcinoma of the rectum.

The diagnosis probably should come ahead of everything else in discussing carcinoma of the rectum or any other structure. Treatment and prognosis come only after diagnosis of the tumor, and they will depend very much upon the stage of the growth at the time of diagnosis. The physician must forever be on the alert, for even the presence of blood in the stool will be tacitly assumed to be due to hemorrhoids. There seems to be an inherent secrecy and an attempt upon the part of the patient to disguise or to defer the recognition of symptoms until, by their very prominence, they at length force notice upon the individual.

The symptoms as given above are the tip-off. Any change in bowel habits warrants investigation. These may have no connection with the condition for which medical advice is sought. The physical findings in early carcinoma are primarily those of the tumor itself. Patients with anemia, loss of weight, obstruction, cachexia, etc., present no problem. They require no alertness or particular concern on our part, for their growths are large, unresectable, except for palliative reasons, and they are diagnosed easily and treated symptomatically.

We should diagnose and treat more early growths. We must look to the rectum for possible trouble. Eighty to ninety per cent of rectal tumors can be felt by rectal digital examination. It is a simple procedure and requires but a moment. When felt by the finger, the growth is a broad-based, indurated, more or less fixed nodule or ulcer-like crater. This is different from the soft, usu-

ally pedunculated, movable adenoma. There may be slight bleeding even without ulceration.

Narrowing of the bowel lumen is important and indicative of an annular growth, the degree of narrowing being proportionate to the size of the growth. Ulceration produces a bloody mucopurulent discharge, often with a peculiarly disagreeable odor. These may be readily observed with the proctoscope, along with the gray necrotic base and the dusky red, friable, elevated, and everted edges of the ulcer. Biopsy is a good adjunct to diagnosis, if carcinoma is present histologically. A negative biopsy means nothing. A barium enema and contrast air injection are good sound diagnostic procedures, particularly for the upper rectum and rectosigmoid. But these, too, may fail to disclose small growths. Barium should never be given by mouth if there is any possibility of obstruction.

The treatment of carcinoma of the rectum is practically entirely radical resection of the tumor and adjacent perirectal tissues. Other things being equal, the more complete the resection, the better chance for cure. The earlier diagnosis is made, the higher the resectability per cent, also the greater number of cures. Resectability rate is rising steadily as surgeons are becoming more radical. As more frequent radical resections are done and patients that formerly were considered inoperable are resected, the mortality rate rises slightly. This is justified because the lives of many not cured will be prolonged, and they will be spared the agonizing death by the primary growth.

It is entirely fallacious that a big tumor requires a big operation and a small growth a small operation. The reverse is much more appropriate. The smaller and easier the growth to remove, the better the chance of cure, and, therefore, the more radical the operation must be. Any procedure should be a thorough and complete operation for that particular patient.

The most important factors in the treatment of carcinoma of the rectum are early diagnosis and radical resection. The first entails cancer consciousness on the part of the patient plus the desire to have investigated possible symptoms and the thorough-



ness of the physician who first examines this patient. The second depends upon the technical skill and fearlessness of the surgeon and upon his will to cure the patient irrespective of a permanent colostomy. The time is past when a patient with carcinoma of the rectum was sent home with a sealed verdict without having every possible effort made to prolong his life and comfort. We cannot conscientiously do this. The handling of these patients requires more than diagnostic ability and technical skill. It requires, also, tact, diplomacy, and psychology. The physician must be a counselor and a friend.

There are many technical operation procedures employed by various surgeons. Needless to say, these cannot be discussed at this time. Some operations are best suited for tumors of particular locations or tumors of a certain type. Wide removal of the tumor should be the aim always. In general, the technic to be employed in any given case is the most radical operation that can best be performed by that particular surgeon. This gives the best chance for cure. A colostomy simply diverts the fecal stream from the rectum. It is an operation for obstruction and not an operation for carcinoma of the rectum.

Probably one of the greatest hindrances to more rapid progress in cure of carcinoma of the rectum is the antipathy for colostomy, not only on the part of our patients, but also by many physicians. I have heard doctors say that they, themselves, would rather die with carcinoma of the rectum than to live with a permanent colostomy. Needless to say, this is reflected in their advice to patients, and, as much as any one thing, prevents increase in five-year cures. In the last few years, the great urge to save the anal sphincter has largely been overcome among surgeons, and to some extent among general practitioners. This is the result of constant discussion of colostomy and its care and to the broadening concept of necessary radical resection. It is being more and more recognized that a properly manufactured and cared for artificial stoma is not an unbearable companion from the standpoint of professional activity or social contact. In my opinion, an artificial stoma must be provided if radical surgery, which

means extirpation of gland-bearing tissues to the height of the mesentery of the sigmoid, is to be employed. Also, in my opinion, there is a universal lack of appreciation of proper care and handling of a permanent colostomy. With proper dietary measures and routine periodic irrigations, it is not, by any means, necessary to wear a bag.

Colostomy is not the treatment for carcinoma of the rectum. To give a patient a colostomy and to leave behind a continuing local growth, with fixation, increasing colonic permeability by bacteria, with necrosis, slough, absorption, and with invasion of the bladder and prostate in the male, or vagina, cervix, broad ligament, and bladder in the female, is an undesirable surgical accomplishment.

Our problem is indeed difficult when in large, well-known rectal and colon clinics only fifty to seventy per cent of patients presenting themselves with neoplasms of the colon and rectum are operable; and, furthermore, when the patients have been cognizant of symptoms for at least an average of ten months. In many cases, colostomy is the only surgical procedure that is possible. Colostomy is only a means of avoiding intestinal obstruction. It should not be considered in any other relationship. The philosophy behind removal plus colostomy is that, irrespective of recurrence of the growth or of carcinoma metastases, such portion of life as remains to these patients is a life of fair contentment.

The prognosis of carcinoma of the rectum, unfortunately, is poor. It depends, in a broad sense, upon two factors. One is the size, duration, etc., of a given tumor and its subsequent individual treatment. The other factor is the attitude toward cure and the recommendations of the physician who first examines the patient. The treatment has improved remarkably during the past two decades, and, generally speaking, the results are commensurate with carcinomas elsewhere. Improvement in diagnosis has lagged. Many of our colleagues are fatalistic in their views; often they openly abhor, actually discourage, any operation which would leave a permanent colostomy.

Other things being equal, the younger the patient, the less favorable the outcome

because of the greater degree of malignancy. The prognosis, in a broad sense, also depends upon the duration of symptoms, degree of fixation, the presence or absence of metastases, the malignancy grade as determined by histologic structure, and upon the general condition of the patient as regards operation risk. Tumors with longer pedicles are less malignant. It may be stated that at the time of operation a given tumor (1) is confined to the wall of the rectum; (2) has invaded the perirectal tissues, or (3) has metastasized to the regional lymph nodes. In the first, it is variously estimated that there should be upward of sixty-five per cent five-year cures. In the second group, the per cent is smaller, depending upon how radical the operation and upon the malignancy grade of the tumor. The third group comprises the tumors that are largely responsible for the fatalistic view, since they are incurable. Unfortunately, this is the largest group, for these are the ones that have not been diagnosed early or have been allowed to go untreated. However, resection certainly prolongs their lives and happiness and prevents the agonizing pain produced by the primary growth. Also, removal of the primary growth has an inhibitory effect upon metastatic growths present and slows subsequent dissemination. It should be emphasized that, at the time of examination or even operation, the size and fixation of the primary and secondary growths are by no means criteria for determining the size and extent of the tumor. Much of this is inflammatory, superimposed upon or concomitant with the carcinoma, and many of the lymph nodes may be enlarged entirely by inflammation. Tumors, thought at first inoperable, often become resectable after decompression of the large bowel and diversion of the fecal stream from the rectum by preliminary colostomy.

The prognosis based upon abdominal exploration is, generally speaking, more accurate than that based upon clinical examination and proctoscopic observations. The size of a primary tumor in itself is no indication of cure, and in itself bears no direct relation to the presence or the absence of metastases. Very often small growths have extensive, large metastases.

Carcinoma of the rectum remains a local disease for about one year. Direct extension through the muscular coats is a slow process, and the fascia propria of the rectum usually is not invaded for about eighteen months.

An untreated case with carcinoma of the rectum lives approximately two years, in pain and misery. The final outlook for every carcinoma of the rectum not operated upon is, at the most, two years of suffering. The exact percentage of surgical mortality seems to me to be a relatively secondary consideration. A simple colostomy does prevent intestinal obstruction; it does relieve the patient of many of the symptoms of rectal irritability and tenesmus. The patients gain weight after the colostomy, but the rectal tumor remains. This means local metastases in the perirectal tissues, broad ligaments and bladder, perforation, perirectal abscess, etc.—in brief, all the terrible sequelae of a death from carcinoma invasion.

#### DISCUSSION

DR. CHARLES C. TRABUE (Nashville): Mr. President, Ladies, and Gentlemen: I have enjoyed very much Doctor Kistler's able discussion of this subject. I think it is particularly fitting at this time that we devote our efforts more and more to improving our diagnostic and therapeutic abilities with reference to all cancers. We are being told by the statisticians that more people are dying each year from cancer. In other words, we are making less progress in the treatment of cancer than we are in the treatment of almost any other fatal disease except heart disease. In so far as our failure to cure more cancers of the rectum is concerned, an analysis will reveal two major causes of this failure. One is our imperfection in surgical technic. The surgical mortality rate is still too high, and the percentage of operable cases is still much too low. Undoubtedly, many of these cases which are relegated to the category of being inoperable could be cured if they had fallen into the hands of a surgeon who was more skillful and more courageous and more conscientious in his effort.

The greatest preventable cause of the failure to cure cancer of the rectum is not lack of courage or lack of ability, but rather a lack of thoroughness on the part of the physicians. There is probably no other disease so easily diagnosed as carcinoma of the rectum. In referring to the lack of thoroughness on the part of the physicians, I mean our failure to make rectal examinations as a routine procedure. It does not require any particular skill on the part of the physician to put his finger in the rectum and make a diagnosis of carcinoma. Doctor Kistler has told us that not

over fifteen per cent of these cancers of the rectum are being passed up or missed if we examine the rectum with the finger, and these remaining fifteen per cent can be diagnosed by a protoscopic or X-ray examination without any difficulty.

I want to emphasize a little bit more than Doctor Kistler did the significance of the presence of blood in, upon, with, or following a movement of the bowels. So frequently when a patient gives us a history of having found blood with a bowel movement, we examine and find hemorrhoids, or maybe a fissure, and it is very easy to say that that is where the blood is coming from. Very often, if we do so, we make a tragic mistake, because the coexistence of hemorrhoids and carcinoma of the rectum is well known, and we are not justified in making a diagnosis until we have exhausted every diagnostic means to eliminate carcinoma of the rectum in the presence of bleeding from the rectum. All too often carcinoma of the rectum will be discovered after a hemorrhoidectomy has been done some few months before. This is a tragic thing to have happen.

Common inflammatory lesions of the rectum, particularly the inflammatory strictures, sometimes offer a problem in differential diagnosis. In such cases, a biopsy under local anesthesia is a relatively simple matter. As a matter of fact, a biopsy should be made in all cases of carcinoma of the rectum to clinch the diagnosis and make it positive.

There are a great many different factors to be considered by the surgeon who is confronted with one of these patients. His first consideration is whether it is possible to remove the tumor at all. The factors weighing against the successful completion of an amputation of the rectum are a diminution in the cardiovascular or renal or liver function. These factors do not have anything in particular to do with carcinoma of the rectum, but are factors that militate against the success of any very extensive major operation. Other factors are obesity and senility. However, we are now successfully attempting to operate on more and more patients of very advanced age.

There is a higher percentage of operability in the female than in the male because of the more roomy pelvis and because of the feasibility of resecting the posterior wall of the vagina when necessary.

Metastases are usually a contraindication to radical treatment, but this, as well as the inability to separate the tumor from other vital structures, cannot be determined usually until after the abdomen is opened. Even in the presence of metastases to distant organs, it is sometimes worth while to remove the rectum if this can be done without too great a risk; the remaining days of the patient will almost certainly be more comfortable, and life itself may be considerably prolonged.

If the tumor is found to be inoperable, and if there is any degree of intestinal obstruction, a colostomy should certainly be done. I heartily agree with Doctor Kistler in his remarks minimizing the horrors of a colostomy. It is remarkable

how much comfort can be gained and how long life can be maintained in these patients with large carcinomas of the rectum after the function of the rectum has been discontinued by the establishment of a colostomy. The rest which is thus provided to the rectum often brings about such marked changes that the tumor which was at first thought to be inoperable may, after some six or eight weeks of rest, become operable. This improvement is due to the subsidence of the associated inflammation.

If resection can be carried out, the usual operation of choice is a combined abdominoperineal operation in either one or two stages. Whether it is done in one or two stages depends upon a great many factors: the ability and skill of the surgeon; the general condition of the patient; the ease with which the operation may be done; and other factors. The one-stage perineal with preservation of the sphincters should almost never be attempted. Only the very occasional low-lying early tumors can be successfully removed in this way.

Again I want to thank Doctor Kistler for his good presentation, his excellent discussion of this subject, to which I think all of us should give a little more thought.

DR. JOHN L. JELKS (Memphis): The conclusions as expressed by the essayist are, in the main, incontrovertible. I am constrained to conclude that the profession is not so cancer-conscious as the intelligent layman is, especially as pertains to cancer of the rectum. Too many cases come to the capable surgeon too late for him to feel justified in the performance of one of the most major surgical procedures. The early development and presence of rectal cancer is so insidious, so devoid of painful or alarming symptoms, that the sufferer delays visit to his doctor until either blood and mucus appear or pain or obstructive symptoms, both late symptoms, are complained of. Even then, some doctors prescribe, but do not examine the rectum, or perhaps refer him or her for an X-ray examination.

Now this is almost, I may say, pernicious dereliction.

I have in mind two recent cancer cases, both women who had been through the hands of several good men; both X-rayed after both oral and anal administration of barium, and one of them repeatedly protoscoped, yet no diagnosis was made until a sigmoidoscope was introduced by me, and in each of these, three-fourths of the gut lumen was invaded and obstructive symptoms were present. In neither of these digital examinations by several men enabled them to make a diagnosis of cancer at the rectosigmoid. X-ray negative report of cancer of the rectum or rectosigmoid emphasizes the need of a protosigmoidoscopy.

The age incidence I find is very important, since youth, with more rapid lymphatic flow, and especially pregnancy, with greater and freer lymphatic drainage of that area, tend to a rapid and early metastasis.

Many cancers of the rectum and rectosigmoid could be prevented by doctors who would use their protoscope and sigmoidoscope, by which means



they can visualize and treat benign ulcerations and hyperplasias. This statement cannot be too eagerly emphasized, for I feel sure I have saved some from cancer graves thus. So I contend that no doctor's armamentarium is sufficient unless it contains both a proctoscope and a sigmoidoscope. Young doctor friends, these will reveal much to you if you will just get them and will not let them get dusty, but keep them bright by use.

The essayist refers to "tip-off" symptoms that warrant investigation—I should say *demand* investigation—and some of these growths (adenomata) may be so soft as to defy digital finding or X-ray finding, yet may be visualized, and they may appear benign, and the fundus may be removed and submitted for pathological examinations and may be reported negative, yet the base of such be malignant. It is for this reason I always cauterize the bases of adenomata after their removal. Some of those for whom I have made diagnoses of cancer of the rectum have said they would rather die than have an artificial anus, and after I have tried in vain to get them to view the conditions as I do, I dismiss them and frankly tell them, "I do not wish to see you again. My hope rests in saving those who wish to be saved."

The operative procedures must be carefully selected by the surgeon in each case, and he who will undertake these radical excisions must be prepared also to deal with complications.

I recall a recent case in which a fibroid uterus required subtotal hysterectomy, and in the same case a large chocolate cyst was removed. This additional work in the case of a woman sixty-two years old with a hemoglobin of sixty-five necessitated a two-stage instead of a one-stage operation and two transfusions, but she got well after I cut my fee in half.

A discharging fistula is another complication which has embarrassed me. In fact, the cancer had its origin at the proximal end of the fistula. I have found it necessary to remove a portion of the posterior wall of the vagina in several cases, and in one case for whom I performed the Mum-

mary operation, a finger could be passed through a rectovaginal fistula in the crater of a late cancer; the posterior wall of the vagina and the posterior lip of a lacerated cervix very close above the cancer were excised. This woman also recovered, but, I understand, died of pneumonia about two years later.

These cases are related to illustrate my belief that: (1) the surgeon must be prepared to meet and deal with whatever complication; (2) less than radical excision of all suspected involved tissue is not dealing fairly with oneself, for, after all, his chief object must be that of a cure of cancer, and thus prove worthy the high calling of our profession.

DR. GENE H. KISTLER (closing): In closing I should just like to emphasize two points, both of which have been mentioned, but I think they are things we should re-emphasize. One is that biopsy, if it does not disclose carcinoma histologically, is of no value; in other words, a negative biopsy means nothing. One can have a large polyp or a large adenoma, a bite of which will not show malignant tissue; and often it will take several biopsies, and even then, if carcinoma is not present and one is suspicious from other findings, the biopsy should be discarded.

The other thing is with relation to the size of the tumor. There is so much concomitant and inflammatory reaction about the tumor and its metastases that very often one will think this is a large tumor that cannot be resected; whereas, after preliminary colostomy and diversion of the fecal stream, the diminution in size of the tumor is remarkable, and, ultimately, it is found that the carcinoma itself is very small and that it can be resected. Many times, as you know, there are many large lymph nodes associated with a carcinoma that do not contain tumor; that is, as a growth, but tumor only as an inflammatory condition.

I appreciate very much the discussion these gentlemen have given this paper, and I hope that all of us can now get more five-year cures.

## THE MEDICAL TREATMENT OF PEPTIC ULCER\*

W. C. COLBERT, M.D., F.A.C.P., Memphis

I appreciate the opportunity of appearing on this program and presenting before this organization my views on the medical management of peptic ulcer. I am not unmindful of the essential and inherent difficulties of such a discussion. Treatment without a knowledge of the exact cause, and without a certainty beyond reasonable doubt as to the correct diagnosis, must of necessity always be unsatisfactory.

*Etiology.*—While we know many factors which unquestionably play an important role in bringing about recurrences of ulcer by adding to its progressive tendency and possibly in causing various complications, we are profoundly ignorant of the underlying and fundamental cause, if there be such an entity. The fact that ulcer is met with only in that part of the digestive tract exposed to the action of hydrochloric acid and pepsin; that is, at the end of the esophagus, the stomach, the first and second portions of the duodenum, the jejunum after gastroenterostomy, makes one realize that this is an essential secondary factor. Even in cases of ulcer where there is a gastric achlorhydria, it is almost certain that the ulcer was formed before the acid disappeared from the gastric secretion.

Regarding the factor or factors which lower the resistance of certain portions of the mucosa, many explanations have been given: (1) that it is due to vascular disturbances brought on by emboli, small aneurysms, or constriction of blood vessels due to pressure or reflex spasm; (2) that it is an expression of autonomic imbalance; (3) that it represents a specific infection originating usually from foci of infection in the mouth, pharynx, or paranasal sinuses (incidentally, I do not agree with this, though I do believe that infection from these sources is a definite factor in the prevention of healing, and in bringing about recurrences, and in keeping up the chronic gastritis so often associated with ulcer, and in acting as a real deterrent to healing);

(4) that it arises from the trauma of food and drink—mechanical, chemical, and thermal; (5) that it is due to hyperchlorhydria and hypersecretion (with this I often disagree, for I believe that this represents the effect and not the cause of ulcer, though here again, its presence unquestionably acts as a deterrent to healing; (6) that it represents a constitutional tendency sometimes associated with a characteristic body form—the so-called hypersthenic type, and sometimes associated with a marked tendency to a spasmophilia, vagotonia, functional disturbance of the trophic nerves, or psychic instability; (7) that it represents the absence of some protective substances in the walls of the stomach (of this there is very little evidence); (8) that it is due to the paralyzing effect of tobacco on the sympathetic nerve endings; (9) that it is of endocrine origin; (10) that it is an expression of hypersensitiveness to proteins, and that the periodic outbreaks of the ulcer syndrome represent allergic or anaphylactic phenomena somewhat akin to asthma.

From this it is easy to see how many and varied are the views as to the causation of ulcer, with some evidence in favor of each view, and we can see how essential it is to try to unravel separately, as best we can, the factor or factors playing the major role in each individual case before outlining treatment.

Experimental work shows that ulcers can be produced by the plugging of blood vessels, after various infections, by injuries of nerves or ganglia, after the injection of gastrotoxin. But all of these ulcers heal promptly, and do not involve the deeper tissues, nor develop the chronicity characteristic of peptic ulcer in man.

We believe with Bolton that all ulcers start with superficial erosions, and while the vast majority of them heal, a few go on to chronicity and involvement of the deeper tissues. The percentage of ulcers found at autopsies is far greater than definitely proven in medical practice. There must be many undiagnosed ulcers, many

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with no symptoms, and many with spontaneous cures—the latter fact unquestionably encouraging as regards therapy.

At the present writing it is difficult to explain why some ulcers heal spontaneously and others become chronic and intractable. It is possible that psychic, bacterial, chemical, or mechanical irritants, or persistent reflex irritation from elsewhere—notably the appendix or instability of the vegetative nervous system—may each be a factor. Thus we see that the cause of ulcer is a very complex problem. It may have a fundamental underlying etiology, and if we ever find it, we may be able to prevent what, in a considerable number of cases, we cannot cure after its full development. However, until we discover such a primary factor, if it really exists, every potential contributing factor must be considered in the treatment of ulcer.

Trauma of food and drink, of alcohol and tobacco, hypersecretion of gastric juices, focal and local infections, autonomic imbalance, constitutional tendency, vascular disease and local arterial spasm, motor and secretory disturbances, of psychic or reflex origin, functional or organic disease of the trophic nerves or neighboring ganglia, protein hypersensitiveness, or endocrine disturbances—all must be considered as potential factors, and each may play its part in the therapy we plan.

*Treatment.*—I have, obviously, not the time to go into the details of the medical treatment of ulcer, so therefore, will speak briefly on certain impressions gained from my experience in this field. In the first place, it has always seemed to me singularly unfortunate that there has always existed, and still exists, in the minds of some, that we must commit ourselves to an exclusively medical or an exclusively surgical form of therapy. This is a most unfortunate viewpoint because, in order to get the optimum results, it is absolutely essential that each case be studied individually, and the treatment planned according to the apparent etiological factors, and the findings in the case.

In a disease of such varied etiology, secondary rather than primary, if you will,

there must be a varied therapy—be it regulation of life, dietetic suggestions, the use of drugs, the application of various forms of physical therapy, or surgical procedure. To hold a brief for any single therapeutic procedure—be it the employment of a special diet, a certain drug, or a special operative procedure—is unscientific, unsound, and unsafe. As regards the general treatment, it is well to remember that while rest to a diseased organ is obviously the great desideratum, in the case of the stomach, we obtain this oftener by placidity of mind and the nervous system than from mere bodily rest. Disturbance in the psychic sphere may produce far more marked secretory and motor disturbance than active exercise, a fact easily proven by experimental studies on animals. It is a realization of this fact that has made it seem wise to utilize more and more the ambulatory treatment instead of insisting upon absolute rest. Of course, in those cases where the symptoms are very acute, and where bleeding is present, physical rest is indicated. Even here, unless we can promote psychic rest, or at least, psychic stability, our efforts sometimes go for naught.

The more I study these cases, the more I believe that psychic factors play a very fundamental role in a large number of cases, especially in the case of duodenal ulcer, in bringing about a recurrence, or in preventing rapid recovery. In most cases, if I had the choice, I should choose mental instead of physical rest. When such placidity results from physical rest, does not entail worry from economic or other causes, it is singularly helpful. On the other hand, in the convalescent stage of ulcer and in the prevention of its recurrence, besides careful habits of living, eating, regularity of meals, proper diet and medication, a normal amount of physical exercise is of greatest value.

*Diet.*—As regards diet, there is a great deal of delusion and illusion, for the fundamental principles are relatively simple. The diet must be nonirritating—chemically, mechanically, and thermically. It must call forth a minimum of gastric secretion, and yet it must neutralize as much acid as pos-



sible. It must furnish sufficient calories to build up the patient. It is the relative emphasis laid upon one or the other of these factors that has led to the development of definite types of diet, and to the acrimonious discussions among the proponents of the special schemes. Some diets such as that of Leube accentuate the sparing treatment; others, as those of Senator, Jarotsky, and Coleman, lay special stress upon the inhibition of secretion; the Sippy regime glorifies the acid-combining quality, while Lenhartz lays particular stress on upbuilding. To robust patients we can give diets of lower caloric value than to those who are depleted, and quite obviously in need of upbuilding. In many cases, especially if the symptoms are acute, a few days of absolute starvation with a rectal drip to relieve thirst and lessen acidosis is often invaluable. Some patients do well on milk and cream; some on cereals; some, and these must be of stern mold, are willing to live on egg-white, gelatin, cream, or olive oil. The percentage of cures claimed for each of these diets is practically the same—seventy-five to eighty-five per cent. These figures, I feel sure, are too high, for a not inconsiderable proportion of these cases would heal spontaneously, irrespective of diet; a certain proportion do not have ulcer, only a pyloric syndrome of other origin, while a certain number regarded as cured are not because of the impossibility of a proper follow-up.

Don't become a protagonist of any special diet scheme, don't believe that one diet is sacrosanct—a fetish that will cure all cases—and that all other diets are anathema. One man's meat is often another man's poison. It is far better to satisfy a patient with one diet than to worry him with another, while often a combination of both is better than either. Frankly, I do not subscribe to the hourly feeding. I believe that the monotony of it is a great strain on the patient, and that persistent alkalinity of the stomach is not as greatly to be desired, as regards healing, as a stomach in which acid is still present, but at a distinctly lower level than the normal reading.

*Drugs.*—The alkalies must be given pre-

eminence because of their almost universal use. In all cases they neutralize a certain amount of acid, and in many cases relieve pyloric spasm, have a moderately analgesic effect due to the action of carbon dioxide gas, though in some, the alkaline carbonates increase discomfort by the rapid evolution of gas. The alkalies are unquestionably more effective when given in combination than when given singly. While there is a very honest difference of opinion as to their permanent effect, there is evidence that certain of the alkalies, notably magnesia, and, according to some, bicarbonate of soda, and calcium carbonate in some cases, in small doses, bring about a real diminution in acid secretion. Various absorbents and inert powders, such as bismuth subcarbonate, barium sulphate, bolus alba, and certain salts of aluminum, are unquestionably helpful in certain cases, whether administered in small frequent doses, or in large morning doses. In certain cases, especially in the winter months, olive oil is very good; if there is evidence of autonomic imbalance playing a large role, there is no drug more effective than belladonna, or its alkaloid, atropine, but given only in submaximal doses. In many cases where psychic irritability or instability plays an important role, bromides are extremely helpful. They lessen affectivity and probably have a distinct effect upon the conditioned reflexes. It is hardly necessary to mention the importance of preventing constipation. It is well to remember that one of the essential points in the Leube treatment is the administration of a morning saline. We have found this helpful in the treatment of ulcer in individuals of the robust florid type.

Infections in the mouth and sinuses must be reduced to a minimum, though I feel that too great stress has been laid upon this, for I do not believe that it is the primary factor in ulcer. In recent years a great deal of stress has been laid upon the treatment of ulcer by various forms of protein—novoprotein, peptone, dead bacteria, casein, sterilized milk, aolan, and Larostidin—all have been employed. There is no question that regarding symptoms, especially pain, this treatment has proven very effective in

some cases. It is probably that due to its stimulating effect upon the sympathetic nerve, there is local hyperemia, relaxation of spasm, and corresponding relief of discomfort. Rectal feeding, of course, can be used for only a very short period to tide over emergencies. As to duodenal feeding, I am frankly opposed to the principle of the constant pressure of a foreign body in any portion of the digestive tract that is diseased. However, in rare instances of gastric ulcer with intractable bleeding, it may be of help.

After all, the principles of treatment are relatively simple—to relieve mental and physical strain as far as possible; to give a nonirritating diet of sufficient caloric value which does not call forth too much acid secretion, at the same time having a relatively high acid-combining power, given at relatively frequent intervals, but not too frequent; with the utilization of that drug suitable to the individual case—be it alkalis, belladonna, bromides, or a laxative.

With the proper application of the foregoing principles of treatment, a great many cases of acute ulcer can be cured, a certain proportion of which, however, would undoubtedly have healed spontaneously. We can definitely relieve the symptoms in many of the chronic cases, and even bring about a symptomatic cure, if the patient is conscientious in carrying out the proper after-treatment. A deep ulcer scar or a cicatrix, though occasionally absorbed, remains as a potential base for further trouble, and this is the real reason for surgical attack on this group of cases.

The fundamental principle of an ulcer cure is not in the treatment of the acute stage, for unless there are marked complications, almost anyone, whatever the diet employed, can relieve the patient when acutely ill. Pain, discomfort, and that greatest of all correctives—fear—will make these patients walk the straight and narrow line and take uncomplainingly their pap and powder at frequent intervals until surcease from discomfort is obtained. However, the real test, so far as freedom from recurrence is concerned, is the test of the aftercure. To hold the patient to a re-

stricted regimen, to make him follow regulated habits of eating and living, for weeks or months, or perhaps, indefinitely, to steer him between overtreatment and hypochondriasis on the one hand, and carelessness with possibly an early return of symptoms on the other, that is the rub, and that is the measure of success of the doctor in the treatment of ulcer. A thorough knowledge of diets, drugs, and physical therapy is not enough, the physician must have, in addition, personality and the power of persuasion, and the patient must have perseverance and character.

*Complications.*—Most complications of ulcer—not all—are potentially surgical. It is believed that hemorrhage unless severe and repeated should not be treated surgically, but medically. If treated surgically, it should never be during the bleeding period. Perforation is obviously surgical, and success is dependent upon the shortness of the interval between the abdominal catastrophe and surgical interference. Gross organic obstruction, deforming perigastric or periduodenal adhesions which render normal physiological function and subjective comfort impossible, suspicion of malignancy (negligible in duodenal ulcer, and, in my opinion, playing a relatively small role, not more than five per cent in gastric ulcer), repeated and intractable hemorrhage, and failure after long and conscientious medical treatment—these, in my opinion, are all absolute indications for surgery.

*Pyloric Stenosis.*—Pyloric stenosis, it must be remembered, is made up of two distinct components—one a permanent stricture not amenable to medical treatment; the other, an admixture of spasm, edema and inflammation relieved by diet, rest, and medication. Until one tries such medication, it is impossible to determine how important a role each factor plays in causing the obstructing phenomena, and to decide whether or not an operation is necessary. Of course, if the pyloric obstruction is associated with a disturbance of the acid equilibrium, with a lowering of the chlorides in the blood, and with gastric tetany, after preliminary treatment with calcium chloride or acetate, intravenously, immediate



surgical intervention is demanded. Thus, we have at one end, the small mucous erosion, the superficial ulcer, the deeper ulcer without obstruction, or with such slight obstruction that the symptoms are readily relieved by medical and dietetic measures, and at the other end, perforation, repeated extensive hemorrhage, marked organic obstruction, great deformity of the stomach or duodenum, due to adhesions, and the suspicion of malignant degeneration. These are just as fundamentally surgical as regards therapy.

Between these two extremes lies a great group of chronic, nonobstructive ulcers without extensive hemorrhages. There will always be an honest difference of opinion as to which is the wiser course to pursue. There would really be no difference of opinion regarding this intermediate group, if surgery had been universally successful in its treatment, but the large number of surgical operations suggested for gastric and duodenal ulcer must mean that there is no ideal operation.

I am not one who preaches the doctrine that it is better to suffer the ills we have than those we know not of, and thus postpone surgery when we are not able to help the patient by nonsurgical measures. It is not fair to the patient nor to the surgeon. We must not forget that however skillful the surgeon no operation is ideal; each has the possible aftermath of adhesions with greater or less disturbance of function. I am quite sure that the number of failures will be materially reduced by better preoperative, and especially postoperative, treatment, and a realization on the part of the surgeon that functional disturbances necessitating medical and dietetic treatment persist long after the underlying pathology has been removed. I am very sure that a very considerable number of potential successes have been converted into relative or complete failures by a lack of or realization of this fact.

As I see it, peptic ulcer should be fundamentally a medical and not a surgical problem. Until we know the real cause of ulcer, and can prevent its development, until we understand why a certain number of super-

ficial erosions become deep ulcers, producing deformity, obstruction, and gastric and duodenal dysfunction, until we can prevent the development of perforation and repeated hemorrhages, surgery must share with medicine the burden of treatment. We should be very guarded in drawing conclusions and in preaching inclusive methods of treatment. Without cooperation, without sharing with each other the knowledge that has come more from our failures than from our successes, no real progress is possible in a field which has so often proven sadly disappointing.

#### DISCUSSION

DR. J. O. MANIER (Nashville): No approach to the problem of the treatment of peptic ulcer has as yet been entirely satisfactory—no matter whether it be medical or surgical. It must be clearly borne in mind, however, in approaching the problem of therapy in peptic ulcer, that medicine and surgery each have their respective spheres and that in so far as the patient is concerned he will be far more likely to attain a satisfactory result if there is good judgment used in selection of the type of treatment to be pursued and, should the selection be surgical, then the best ultimate results will be obtained through the combined efforts of surgeon and internist.

The general principles underlying the medical management of peptic ulcer to a large degree revolve around an effort to establish in the affected individual local and general conditions which offer the best opportunity for healing of the ulcerated area. On the one hand, we endeavor to set up a psychic nervous and physical environment calculated to permit normal physiologic functioning of the stomach, endeavoring to prevent or lessen the tendency to hypersecretion of the gastric juice with its destructive, corrosive effect on the ulcer-bearing areas, and, on the other hand, to keep neutralized or at least at a low level of concentration the existing gastric acidity by diet, drugs, etc. The attainment of these two objectives is the *sine qua non* of success in the medical management of peptic ulcer and it matters little whose diet or what alkaline powder or inert substance may be used. The soundest point of many in Doctor Colbert's paper was his plea for the avoidance of regimentation and inflexible standardization in the treatment of peptic, as few conditions one meets require as much flexibility in the details of management if treatment is to be satisfactory.

The question might be asked as to why the medical management of ulcer has proven so unsatisfactory when we have such a clear understanding of what must be attained to permit healing and so many suggested avenues of approach to this end. The answer seems to me to revolve around a num-



ber of points, among which may be mentioned the following: (1) The fact that as yet we do not know the actual cause of ulcer, and as is true of most disease processes no satisfactory progress is made in cure or prevention without definite knowledge of the etiological agent involved. True we know many factors which can experimentally produce peptic ulcers and which are contributory or mayhap actual clinical etiological factors in some instances, but in the final analysis we do not know *the cause* if such alone exists. (2) Our failure to recognize ulcers at an early stage of their existence when they are more superficial, less fibrosed, and hence, more susceptible to healing under proper management. It is a challenge to our ability as well as an indictment of our clinical acumen that the duration of symptoms in the average ulcer case seen is usually from seven to eight years. No excuse can be offered for our professional dereliction in this instance other than lack of thoroughness in history taking and failure to investigate radiologically patients presenting suggestive or persistent digestive syndromes. (3) The rather prompt relief from discomfort obtained by the average uncomplicated ulcer patient under any of the recognized modes of treatment often makes it more difficult to secure the cooperation of the patient over the necessary period of time to insure actual permanent healing. Being human, the patient, once relieved, in many instances considers himself cured unless he has been definitely and firmly informed by his physician that such is not the case.

The problem of therapy in gastric and duodenal ulcers—both so-called peptic ulcers—to me seems a somewhat different one. Personally I am not able to secure the same usually *prompt and complete* relief of symptoms in gastric as in duodenal ulcers. Possibly this may be my fault, but the fact remains notwithstanding. And though I do not hold to the philosophy, as do some, that the majority of gastric carcinomas originate of necessity pre-existing ulcers, yet all of us admit that duodenal carcinomas rarely if ever occur, while the possibility of malignant change in the stomach is an ever-present threat in the presence of a presumed gastric ulcer either from malignant degeneration of the ulcerous area or the possibility of a mistaken diagnosis. Personally, I am much more prone to advise surgery in presumed gastric ulcers than in duodenal especially if under proper management the ulcerated area does not begin rather promptly to show signs of healing by definite decrease in size as shown by serial X-ray studies or if when originally seen it is above a certain size.

To manage the ulcer problem properly it is just as essential to have in mind the surgical indications as to know the many medical approaches to its cure. Time does not permit the consideration of these in their entirety, but among the more prominent ones may be mentioned in passing the following:

1. Acute perforation and perigastric or peri-duodenal abscess resulting from slow leakage of the ulcer into surrounding tissue.

2. Pyloric obstruction, but it must be remembered that often obstruction may be more apparent than real, as edema and spasm may at times contribute as much to the mobility of the stomach to empty as actual cicatricial tissue.

3. Repeated gastric or duodenal hemorrhage—though operation is seldom, if ever, a sound procedure as an emergency measure in such a complication, but had best be done on the interval after proper acute operative preparation by transfusion, etc. A large gastric or intestinal hemorrhage is an alarming situation to face, but it is well to remember that only a very few peptic ulcer patients actually die from acute hemorrhage.

4. The failure of repeated medical cures. Though surgery offers far less than 100 per cent good results, it is our only recourse after medical failures.

5. The type of patient who is intellectually and economically unable to satisfactorily carry out a medical regime. In this particular type I feel that one is justified in advising surgery at an earlier date than in the general average.

In conclusion, though we have not as yet by any means a perfect approach to the problem of the medical treatment of peptic ulcer, at the same time we can do much to improve the percentage of good results obtained by (1) more careful investigation of patients presenting digestive symptoms in that by so doing more early cases of ulcer will be discovered since ulcers are more curable the nearer the acute stage they are; (2) the application of treatment to the individual case rather than trying to treat all ulcer cases by the same rule of thumb; and (3) finally by impressing on our patients the necessity of continuing treatment far beyond the time of comfort if cure is to be obtained.

DR. C. R. THOMAS (Chattanooga): After listening to Doctors Colbert, Lahey, and Manier, there is very little left for me to say, and I think the less I say the less trouble I will get into.

It is extremely difficult to discuss a paper when you are in complete agreement with its contents or when you cannot improve upon any of the points, but it seems to me that not enough attention has been paid to the general practitioner as the man who has to treat these cases from an ambulatory standpoint. If he will take the time and make the effort, the general practitioner can discover these cases very much earlier than those of us who practice internal medicine.

It is a condition in which it is often better to treat the patient rather than the lesion, and there, it seems to me, the general practitioner has a very definite edge on us.

As I listened to Doctor Lahey last night discussing the advisability of keeping these patients in bed for a minimum of three weeks, I realized how often that is completely impossible, not only from

the general practitioner's standpoint, but from that of the local internist. All of us know that cases of this type can be much easier hospitalized away from their environment. If you keep them in their own home town where they have access to their business and their family and financial difficulties, it is almost impossible to give them the rest that they very definitely need. In these cases, it seems to me if you give the individual rest first and then treat the lesion, you make a long step forward in the cure, particularly of the early cases. Again, I feel that the general practitioner with his intimate knowledge of his patient can do this very much better than the rest of us. Of course, if the disease becomes chronic, then it becomes a condition for a specialist.

It is hardly worth while for me to go into the indications for the medical treatment, which you all know. Treatment is tending more and more toward the medical rather than the surgical, the surgical condition being left largely to those cases with complications.

I would like to say this word about therapy. Unfortunately, all of us, I think, even those doing internal medicine, and more particularly the men who are in general practice, are bombarded by high-pressure detail men extolling the advantages of their particular remedies, no matter what they may be. Any remedy that will give the individual relief from his symptoms is justifiable, but rest, not only mental, but physical rest, rest of the stomach, even if surgery has to be resorted to in order to bring about that rest, is the prime factor in the treatment of ulcer.

DR. JOHN L. JELKS (Memphis): I would like to record two or three points to emphasize what Doctor Colbert has said. I am thinking of some of the cases that have been examined in my office and referred to internists for treatment. I am thinking of the psychic effect; I am thinking of the focal infection effect; I am thinking of the sociological effect of our complex form of life. They do not have peptic ulcer among the natives of Africa. Why? They eat rough food. (We put our patients on diets.) They never have peptic ulcer, neither do they have septic upstairs infections, neither do they worry.

I had an estimable lady sent into my office. She knew she had gastritis and she knew she had colitis. She was even passing some mucus to prove it. I examined her thoroughly. I had her X-rayed from mouth to anus, and found spasm in the duodenum, spasm at the ileocecal valve, and no other trouble. Her colon was absolutely normal. Yet she had colitis and she had gastritis and she had peptic ulcer. When she saw that she could not command me to treat her, she then called me to her home, which is contrary to my rule, but I went. I met an old lady who admitted me to the house, but not to the lady's room. I did not know her.

I later found she was her mother-in-law. I told her she would have to quit some of her social affairs, such as chairman of this church affair and social club affair, chairman of two or three different things, and she would have to rest. The next day she phoned me and said: "Doctor Jelks, you have got to save my home."

I said: "I have been waiting for that very thing. I knew it was there."

I phoned her husband and told him to come to my office. He was very busy. He was a cotton man. I said: "I am busy, too. I want you at once."

When he came in, I said: "Do you want to save your home?"

"Why, Doctor Jelks, what do you mean?"

I said: "I mean what I say. You have too much mother-in-law for your wife."

"Why, Doctor, I didn't know there was any friction."

I said: "No, because they are proud and they both are fighting for your affections. Get rid of her mother-in-law or nobody can cure your wife." He did so and the lady almost hilariously phoned me: "Oh, Doctor, I will never forget you. You saved my home." I cured her of her colitis and her gastritis.

When you see in these cases what Doctor Tucker of Wichita, Kansas, had the pleasure of calling Jelks' little red spots—small red infarcts in skin of chest and other parts of the body—they indicate focal infections, why can't you have an infarct in your stomach as well as on your chest wall? You will find them if you have serious focal infection upstairs. You have to get rid of them because if you have these infarcts on the chest you may have them in the stomach, colon, or elsewhere as a fore-runner of malignancy.

DR. W. C. COLBERT (closing): Just a few words of reiteration of what has been brought forward today in this condition. The early ulcers, as a rule, give us very little trouble in the medical treatment. The surgical treatment is pretty well demarcated, I think now, but this intermediate group is the group which causes both medical men and surgeons worry.

As we all know, during the depression and with the fall of the stock market, the incidence of peptic ulcer rose tremendously, and unless we got the man or woman stabilized from a nervous standpoint we persisted in having ulcer symptoms, but after we were able to do that, to stabilize the nervous system, give relief from worry and economic stress or whatever it might be, we got results from the treatment. It is a matter of persistence in the handling of the psychic conditions, or, as Doctor Casparis says, behavior. Regarding Doctor Jelks' foci of infection, I think we all believe that foci of infection should be removed. Whether it is a primary factor is rather a question in my mind.



## PRESERVING PHYSIOLOGICAL FUNCTIONS IN NASAL SURGERY\*

R. G. REAVES, M.D., Knoxville

The external nose is one of the most distinguishing marks of the anatomy of the face and either adds to or detracts from the beauty of one's appearance. Likewise the nose functioning properly adds to the pleasure of life by giving flavor to our foods and resonance to our voices. Plenty of fresh air filtered through the nose furnishes good oxygen for the red cells and a feeling of well-being to one's person. Hence a nose with healthy physiological functions is as much to be desired as one of beauty.

The internal nose has five physiological functions, namely: (1) respiration, (2) olfaction, (3) aeration of sinuses and middle ears, (4) resonance to voice, and (5) immunization or autovaccination. While none of these functions of the nose are necessary to life, they are all highly desirable.

In doing a nasal operation one or more of these functions may be improved or restored. In cases of malignancy the physiological functions may be entirely disregarded. There are cases where the nose is so filled with polypi that all the functions are lost. In such cases the turbinates may be so diseased that they cannot be saved. A large majority of the operations on the nose should be done to restore the physiology to normal. In doing a septum operation to relieve headache you should establish free breathing and better ventilation. Opening a blocked sinus re-establishes ventilation and drainage and may restore a diseased mucous membrane to normal. A healthy mucous membrane furnishes a normal secretion and aids in immunization.

About twenty-five years ago there was a large amount of nasal surgery being done without any regard to the physiological functions of the nose. Turbinates were removed and spurs sawed off, anything to get a larger nasal passage for breathing or to cure infected sinuses. A large space was often obtained but few sinuses were cured by such methods. About this time an operation was devised where the middle

turbinates were removed and the ethmoids plowed into with a curette. The operation proved to have its danger to life and far too many poor results. Last but not least, many of the operators were untrained or had had a six-weeks' course. No wonder the results were poor—no wonder the medical profession as a whole and the laity were saying, "Once a sinus infection, always a sinus infection," or "one nasal operation leads to another."

I was guilty of removing the middle turbinate for several years, but threw the curette away early in the beginning. I was encouraged to do so because my brother, Dr. W. P. Reaves, was getting good results in his sinus surgery by using clean-cutting biting instruments. He too was removing the turbinate, but never used the curette, his motto being, "Do your surgery, leaving the tissue as little traumatized as possible."

In 1928 Dr. John Pratt of Minneapolis read a paper before the Southern Medical Association at Washington, D. C., advocating doing an intranasal ethmoidectomy and sphenoidectomy, leaving the middle turbinate in situ. I remember Dr. Ross Skillern discussing this paper, and he seemed rather surprised that Dr. Pratt would attempt such operation. Dr. Pratt was advocating the use of a curette which I had not used for some time. He was entering the ethmoids anteriorly and working backward. I did not begin to leave the turbinate for about six years later but considered such procedure desirable and continued to give it further study. I finally began by entering the posterior ethmoids under the posterior end of the middle turbinate, then using a biting instrument, working forward and upward. Of course it is necessary to push the middle turbinate toward the septum to give vision. The turbinate is held over with a long-bladed speculum. I found that it was perfectly easy to do the operation safely. It may be necessary to do a septum operation first.

An operation done in this manner does not destroy the turbinates and leaves the nose to function normally. The average

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.



physician in looking at the nose would never know that it had been operated on. On shrinking the nasal mucosa and using a probe, one can readily tell the operation has been done.

Having stated that practically all operations on the nose, both external and intranasal operations, can be done and most of the functions of the nose be preserved, what are the indications for and the results of such operations?

Indications: To establish proper breathing; to relieve pressure causing headache; to establish drainage and ventilation of sinuses in order to free infection; to get rid of excessive nasal discharge; to relieve headaches; to get rid of systematic infection causing such as iritis, neuritis, or rheumatism; and, to improve the general health of the patient. Thus you see there are many indications for doing nasal surgery.

In my hands the results have been uniformly good. From January, 1936, to January, 1940, I did eighty intranasal antrum windows with good results in seventy-seven cases. During the same period I did fifty-nine ethmoids with fifty-six good results, and twenty-eight frontals with good results. Some of the frontals were not involved but were opened up as part of the ethmoid operation.

At the forty-fifth annual meeting of the American Laryngological, Rhinological and Otological Society, Chicago, May, 1939, a Symposium on Final Results of Operations for Chronic Suppurative Paranasal Sinusitis was given by the following doctors: Dr. Bert E. Hemstead of Mayo Clinic; Dr. E. R. Faulkner, New York; Dr. Samuel Salinger, Chicago; and Dr. M. F. Arbuckle, St. Louis.

The following is quoted from Dr. Hemstead on Intranasal Antrum Window: "Two things should be considered in the treatment of every patient having maxillary sinusitis; first, cessation of discharge, and second, restoration of the antral mucous membrane to as nearly normal condition as possible. Unnecessary destruction of the ciliated epithelium should be avoided. A functioning mucous membrane is to be preferred to scar tissue.

"The presence of allergia calls for special treatment. The infection should be cleared

up, but a dry antrum cannot be obtained until the allergic condition has been brought under control.

"The presence or absence of infection in the upper sinuses should be determined. The antrum may be merely acting as a reservoir; if such is the case, draining it alone would not cure the infection. Post-operative care is of the greatest importance.

"The intranasal window operation is easily and quickly accomplished with the patient under local anesthesia.

"The high percentage of good results obtained with this operation justifies its use in the treatment of certain patients having chronic maxillary sinusitis.

"In this report 1,634 cases are gathered from the literature. A good result was obtained in ninety-seven per cent of these cases by the intranasal antral window."

From Dr. Faulkner's paper on End Results of Intranasal Operations on the Ethmoid, Frontal, and Sphenoid Sinuses:

"In this brief resume I have endeavored to show from my own experience the possibility of lasting benefits from intranasal sinusal operations. I do not consider this the sole method by any means, as many patients can be properly treated only by the external route, but I rather deplore a tendency to advocate the external method as the only one which should be used in operations in this field. I deplore also the tendency to denounce all kinds of operations on the sinuses, for while this anatomic field is difficult and variable, the many excellent results obtained may compare favorably with the benefits from operations in any region of the body."

From Dr. Salinger's paper on End Results of External Operations on the Maxillary Sinus:

"In conclusion I say again that the radical operation on the antrum has in my hands proved to be the most uniformly successful and satisfactory operation of the entire sinusal repertoire and that success in its application depends on the scrupulous care with which the local process is studied and the relation to constitutional factors appraised, the degree of skill applied in its performance and the attention that is paid to disease in the other sinuses."

From Doctor Arbuckle's paper on End Results of External Operations on the Frontal, Ethmoid, and Sphenoid Sinuses: "I find that from 1921 to 1939 I have operated for sinusal disease in approximately 600 cases in the Barnes Hospital alone. During this study I have been able to check up on a sufficient number of cases to gain adequate and most interesting information. One of the most interesting facts brought forth in this study is the tremendous decrease in the number of operations on the sinuses. This is undoubtedly the direct result of increased knowledge of the manifestations of allergic reactions.

"In over 600 cases of operation, there has been but one death, that of a patient who had an abscess of the frontal lobe, which was a direct extension from an infection of the frontal sinus, and in this case the patient's family refused operation for several days, and the patient, when operated on, had been in a coma for three or four days."

You will notice that in these quotations from the Symposium on Final Results of Operations for Chronic Suppurative Sinusitis only one death was referred to. Furthermore as to the safety of nasal operation I quote from the September, 1930, Laryngoscope, by the late Dr. Sidney Yankauer: "We must never forget that the mucous membrane of the nose is not merely the lining of a hole through which we breathe, but that it is a functioning organ, the removal of which from the nasal interior is injurious to the patient.

"During the last ten or twelve years, numerous ethmoid operations have been performed, not only in my private practice but in the service at Mt. Sinai Hospital, and during all these years not a single death following ethmoid operation has occurred, although during the same time there have come to Mt. Sinai Hospital every year two or three cases of meningitis following ethmoid operations performed with a curette, in other institutions.

"In fact, the number of complications, such as orbital cellulitis, swollen and ecchymotic eyes and so-called meningisms, have been practically absent and the postoperative care of our ethmoid cases has been reduced to a minimum. The operation is

performed entirely with punch forceps. The curette is never used. The curette is a crude and inefficient instrument, incapable of anything but rough operative procedure, and is entirely absent from our ethmoid instrumentarium."

This quotation emphasizes the fact that the curette is a crude instrument and has no place in a nasal operation unless you wish for total destruction of the nasal mucosa.

In conclusion I wish to say that operations on the nose should not be done indiscriminately. A careful diagnosis should be made by studying the history of the case, the physical findings, and the laboratory reports. One must learn to distinguish between infection and allergy. Infection uncomplicated with allergy responds readily to the proper treatment. Allergic patients respond more readily when the infected sinuses have proper drainage. Finally, nasal operations can be done safely and when properly done add much to health and happiness of many patients.

#### DISCUSSION

DR. J. J. SHEA (Memphis): The physiologist has neglected the study of the functions of the upper respiratory tract. The doctors, who are specialists in the treatment of this region, differ in their beliefs and practices. There are those who consider the sinuses merely as reservoirs for the collection of discharge and there are those that consider the sinuses as an important laboratory in the maintenance of our resistance against the infections of one's environment. In this latter school, the preservation of the physiological functions of ventilation and drainage are diligently maintained from infancy to old age. Nature has designed a plan of normal development for the growth of the sinuses, which can be arrested by one severe attack or the accumulated action of multiple mild attacks of sinusitis. The sinus disease may be either allergic or the result of infection, but certainly the obstruction will prevent the normal pneumatization of the sinuses and an arrested sinus remains vulnerable to infections throughout life.

The surgery upon the nose and its paranasal sinuses is either for the removal of a danger or the restoration of the functions of ventilation and drainage. Accident to the nose of an infant or a child demands that every effort should be exerted to replace the nasal bones in their proper position and to readjust the component parts of the septum, thus preventing deflections of the septum. When a child fails to respond to systemic and local treatments of an upper respiratory infection, the sequela of sinusitis results, and this disease should receive the same thorough care, even irrigation of the



empyema of the sinus, as in the adult. I thoroughly endorse the operation described by Doctor Reaves and found it to be of permanent value. The old adage—once a sinus always a sinus—is wrong and may be changed today to once a sinus always a sinus, except when properly treated, and that includes proper operation.

The question of how much surgery should be done upon an allergic nose has been presented with widely varied opinions from the allergist and the surgeon. The rhinologist believes that corrective surgery for the removal of septal obstructions and window resections of the maxillary sinuses afford relief by improving the mechanics of the nose. The removal of the allergic polyp is evident, for the correction of the allergy will not absorb the polyp present, though it will prevent the future formation. Radical surgery in the allergic nose is not necessary and is not permanent unless accompanied by a correction of the allergy.

Doctor Reaves has given you today what is accepted as the modern intranasal operation. In the hands of those properly prepared in the performance of this operation, one may say that it will retain the physiological nose after the correction of the pathology.

DR. STEWART LAWWILL (Chattanooga): Mr. Chairman and Gentlemen: I enjoyed the paper very much. I have seen this film of Doctor Reaves' several times before, and I always feel there is something new to learn in it. This is a very timely paper. It is appropriate that we nose and throat men do a little missionary work to get nasal surgery out of the cellar. Too long the public and even the general medical profession have felt that nasal surgery once attempted had to be continued. That is not true. Formerly, nasal surgery was at-

tempted without due regard for the pathology present. The usual surgery was attempted for the purpose of improving ventilation of the nose, and in cases of allergy and hay fever the operation was done regardless of what was causing the obstruction. Today nasal surgery, in good hands, is a safe procedure and is not going to lead to multiple subsequent operations, as is the general belief among the public.

Consider the function of the nose. It secretes a pint and a half of fluid in twenty-four hours, half as much as the kidneys secrete. That function should be preserved if at all possible. The other functions, olfaction and vocal resonance, are not so important, but ventilation of the sinuses is important. Today the rhinologist coordinates his work with that of the allergist and does not attempt surgery on cases rightfully belonging to the allergist. Surgery of the nose today consists of the application of those well-known principles of surgery elsewhere: drainage, removal of diseased tissue, preservation, if possible, of all normal tissues. In those cases coming in for ventilation alone, submucous resection is often all that is needed to improve breathing, and many times the ventilation and aeration of the sinuses can be improved by this one operation.

Where there are diseased sinuses present, I think the work as outlined in this picture and by this paper of Doctor Reaves' is so self-explanatory that I do not need to enlarge upon that.

The treatment of headache, sinus drippage, and focal infection comes under some form of nasal surgery.

This paper is excellent. I think the film is a wonderful one, from which we can all get lessons. I have enjoyed the paper and I wish to thank Doctor Reaves for bringing it to us.



# THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### REJECTED DRAFTEES

Registrants, draftees, and rejectees have been the subject of a great deal of discussion in lay and medical literature in the last year.

Various and sundry attempts have been made to inject many side issues into the program of military preparedness. It has seemed at times that some very clever people have employed very clever methods to connect their pet projects of one sort and another with the major program of military preparedness. It has seemed also that the attempt has been made to accomplish such connections in such a way as to make it appear that those who oppose the adoption of the pet projects are actually opposed to the major program.

The medical profession has favored an effective program of military preparedness. We have contributed toward the accomplishment of medical preparedness in such a way as to merit and receive commen-

ation from people in high places and thoroughly acquainted with the facts. The medical profession has not favored the adoption of all the pet projects that have been proposed. As a matter of fact, it is obvious that in many instances the pet project cannot be carried forward without jeopardizing the progress of the major program. For example, the proposal was made in all seriousness that blood be taken from each registrant on the day of registration for a Wassermann test. About seventeen million men registered that day. It is obvious that there was not a sufficient amount of glassware to provide containers for the specimens much less to draw the blood and run the test.

The medical profession is not opposed to the Wassermann test. It is not opposed to each man having a Wassermann test. The medical profession is opposed to the idea of jeopardizing the preparedness program by such a practice.

Another discussion has centered about the high percentage of rejectees. There has been little accurate discussion of the causes of rejection. For example, comparisons have been drawn between the percentage of men rejected in 1917-1918 and the percentage of men rejected in 1941 without stating the fact that the standard of physical examination has been changed very radically and that an entirely different procedure is followed in 1941 from that followed in World War No. 1. For example, the physician on the local draft board made the examination in 1917 and 1918, and if the draftee was passed he was in the Army. Today, the draftee receives an examination by the physician member of the county board, but is not in the Army until after he has passed another board which has facilities for a very complete examination.

Some accurate facts are beginning to come out, which indicate that minor defects, such as defective teeth and defective eyesight, are major causes for rejection. These defects may not interfere at all with the usefulness of the man in a civilian occupation.

Certainly the attempt that has been made to indict the medical profession for the apparent unfitness of a fairly large number

of men for military service is not warranted.

With reference to hernia as a cause for rejection. This condition is a cause for rejection now. In 1917 men with hernia were not rejected. They were admitted to the Army and then were ordered to have their hernias fixed. This policy was abandoned before the end of the war in 1918.

Another discussion has centered about the correction of the defects in the rejectees. The proposal was made to correct all these defects at the expense of the government as a means of accomplishing an all-out military preparedness. Steps in this direction have already been inaugurated.

A report has recently been circulated to the effect that a group of about eighty-odd rejectees were assembled at one point for the purpose of having their defects looked into and corrected. Of the eighty-odd men who had been assembled only three were willing to have their defects corrected. They refused treatment.

It is not possible to make any estimate of the cost in time, energy, and money that was expended in the work of assembling and examining these men. It will be of interest to see what the next proposal will be with reference to those who have declined to have their defects corrected at the expense of the government. Incidentally, this fact destroys the argument that poverty explains all.

In so far as we know, the policy of compelling the rejected draftees to accept treatment has not been proposed. If it should be proposed and adopted, we will have an opportunity to witness the introduction of full-fledged communistic medicine in so far as the rejected draftee is concerned.

It seems appropriate to make the suggestion that if we are fighting for the preservation of democracy, then we had better maintain a certain semblance of consistency in our attitude toward the principles of democracy.

Certainly democracy has its faults, but it is also true that some of these faults are inherent in democracy and cannot be corrected without the complete destruction of democracy. The medical profession is unwilling to kill the idea of democracy by the

performance of a radical operation for the alleged purpose of correcting its faults.

### THE PLAGUE

A news release issued by the United States Public Health Service came to the desk recently. The first paragraph of this release is as follows:

"Evidence that plague infection among wild rodents of western United States is spreading eastward has prompted Surgeon General Thomas Parran of the United States Public Health Service to call a plague control conference, August 28 and 29, at Salt Lake City, Utah."

It is gratifying at this time to see evidence that this particular branch of the federal government is engaged in the performance of the duties for which it was created and which it is especially qualified to perform. Undoubtedly, the country as a whole has suffered some as a result of the effort and disposition on the part of this agency to devote its attention to subjects in the medical field which it is not suited to perform either by experience or training.

Some years ago the House of Delegates of the Tennessee State Medical Association instructed the editor to publish the report of delegates to the American Medical Association as soon as submitted rather than wait until the next meeting of the House of the State Association.

The State Association meets in April. The American Medical Association, as a rule, meets in June. For this reason there is a lapse of many months between the adjournment of the House of the American Medical Association and the next meeting of the House of the Tennessee State Medical Association.

The following is a report just submitted by the Tennessee delegates to the American Medical Association:

### REPORT OF THE TENNESSEE DELEGATES TO THE 1941 AMERICAN MEDICAL ASSOCIATION MEETING AT CLEVELAND, OHIO

The scientific exhibits were extensive and most elaborate. Four to five movies were going on all day, covering a wide variety of subjects. In the basement, below the



main floor of the auditorium, some 200 firms exhibited their goods.

The general subjects were discussed in another part of the auditorium and the meeting places of the various sections were somewhat scattered, many of them being held in small auditorium rooms.

In the House of Delegates, 168 out of 175 were present. The personnel of the House comprises not only representatives based on state society membership, but also has one member each from Hawaii, Canal Zone, Alaska, Puerto Rico, and two from the Philippines. In addition, one each from the Army, Navy, and Public Health Service. The following specialties have one representative each:

- Practice of Medicine
- Surgery, General and Abdominal
- Obstetrics and Gynecology
- Ophthalmology
- Laryngology, Otology, Rhinology
- Pediatrics
- Pharmacology and Therapeutics
- Pathology and Physiology
- Radiology
- Nervous and Mental Diseases
- Dermatology and Syphilology
- Preventive and Industrial Medicine and Public Health
- Urology
- Orthopedic Surgery
- Gastroenterology
- Anesthesiology

These various delegates are listed to demonstrate the democratic character of the House. All resolutions and reports are referred to appropriate reference committees appointed by the Speaker of the House, and the House votes on the report of the Reference Committees.

The American Medical Association is now ninety-five years old and numbers 119,000. The incoming president, Dr. Frank Lahey, of Boston, stressed the necessity of getting the younger men interested in medical organization.

Dr. Fred Rankin of Lexington, Kentucky, was chosen as president-elect. The distinguished service medal was awarded to Dr. James Ewing of New York.

There was discussion about the payment to medical men for examination of draftees.

This was referred to the Committee on Medical Preparedness.

On account of the prevalence of tuberculosis among interns, the necessity of their physical examination prior to their assumption of duty was emphasized.

In a resolution presented by Michigan, the general practitioners requested recognition as an additional section, but the resolution embodying this was returned to its authors. The House also rejected the request for a certification board for general practitioners.

The federal hospital construction bill at present is quiescent, but may at any time be brought to life on the ground of the necessity of medical care for the migrant indigent, who in certain cases are federal and not state charges.

They approved the idea that the education of medical students be not interfered with, and that it was up to the local board to defer their entrance into active service until their education is completed.

Massachusetts has a state law about coroners, and they introduced a resolution relative to autopsies. The House is to appoint a committee of three to study the relationship between medicine and the law and to set up a committee to make their findings available to state medical associations. This resolution was referred to the Board of Trustees for study.

The Judicial Council emphasized the lack of uniformity among state medical associations in their classifications of membership, and they proposed to draw up standard specifications.

In order to have a wider geographic representation a constitutional amendment was proposed to increase the membership on the Board of Trustees from nine to eleven. This lies over one year.

The history of the American Medical Association trial was read by Doctor Booth, chairman of the Board of Trustees, and the American Medical Association attorney. Mr. Burke also discussed the matter and answered questions from the floor. The House approved Doctor Booth's report and voted to carry this case to the court of last resort.

Michigan introduced a resolution of ap-



proval for a government hospital to be built for research and study of mental and nervous diseases with special reference to epilepsy. The House disapproved this further encroachment on the private practice of medicine and the involved costs.

The question of volunteer medical workers for foreign countries was referred to the Board of Trustees to formulate a policy.

The New York delegation sponsored a resolution for standardized tattoo on all people having serum sensitivity, the idea being if such an individual were rendered unconscious by an accident that his attending physician might be forewarned that here was an individual who could not stand the administration of horse serum. This was not approved, the objection being raised that if tattooing became prevalent for all necessary dangers the physician would of necessity become acquainted with the Morse Code.

The request by the organized 8,000 women physicians for Army commissions in time of war was not approved after the Reference Committee had consulted with Army and Navy representatives. They stated it would necessitate congressional action and would interfere with the present arrangements, and is not in the best interest of the country. It was pointed out that the United States Public Health Service is open to them and that with the large number of physicians away from home, it was believed that their services could be used at home to better advantage than service with the troops.

Refugee foreign physicians are largely located in New York and are in this country in considerable numbers. The House referred this question to the Committee on Military Preparedness so that some form of work might be provided for them.

New York introduced a resolution that all hospitals recognized for intern training should have as heads of the following departments—pathology, anesthesiology, radiology, physical therapy—men who hold certificates of membership issued by these various specialty boards. The House disapproved this resolution, and there was a good deal of comment relative to the specialty boards. It was the opinion of the House that, although originally the specialty

boards were closely allied to the American Medical Association, the trend has been to steadily lessen this alliance.

In commenting on the report of the Bureau of Medical Economics with reference to the prepayment for medical care, the House approved of the principle involved by the adoption of the following (this is an extract from the report of the Reference Committee):

"It is recommended that the Board of Trustees take whatever steps are necessary to insure continuity of this important phase of the work of the bureau to the end that there may be established some method of coordination and interchange of material pertinent to the administration of such plans in order that all state and county medical societies may profit thereby. It is further recommended that the House of Delegates reaffirm its belief that the principle of prepaid medical care justifies an experimental period, during which time advice and assistance be given to medical societies that elect to conduct such experiments under medical sponsorship."

A resolution was adopted to make the 1942 meeting in Atlantic City a Pan-American session, and that Canada and the South American countries be invited to attend and participate in this meeting.

The House also recommended that the Board of Trustees be asked to establish a commission on Pan-American relations to advise on the various problems of Pan-American import.

E. G. WOOD,  
H. B. EVERETT.

**\*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY**

David S. Carroll.....	Memphis
William Norvel Cook.....	Columbia
Harry M. Estes.....	Nashville
Thomas G. Gordon.....	Fosterville
John Olney Kennedy.....	Knoxville
Carruthers Love.....	Memphis
Arthur R. Porter, Jr.....	Memphis

**ORDERS REVOKED**

J. W. Erwin.....	Blountville
William G. McEvitt.....	Madisonville
Arthur R. Porter, Jr.....	Memphis
Albert Weinstein.....	Nashville
Bernard M. Weinstein.....	Nashville

\*Based on information published in *Journal of the American Medical Association*.

## DEATHS

### DR. V. O. BUTTRAM

Dr. V. O. Buttram, Crossville; University of Tennessee, Medical School, 1929; aged thirty-nine; died October 1, 1941, following injuries received in automobile accident.

### DR. W. H. MCCOLLUM

Dr. W. H. McCollum, Jonesboro; Louisville Medical College, 1892; aged seventy-three; died September 4, 1941.

### DR. B. W. SUTTON

Dr. B. W. Sutton, Huntland; University of Tennessee, College of Medicine, 1899; aged seventy-five; died July 9, 1941.

## RESOLUTIONS

### RESOLUTIONS ON THE DEATH OF DR. W. H. MCCOLLUM

*Now whereas* Almighty God, in his infinite wisdom, has removed from the sphere of his earthly activities Dr. W. H. McCollum; and

*Whereas*, Doctor McCollum was for many years a practicing physician in Washington County; and

*Whereas*, we deplore his loss, but bow to the will of the heavenly Father, who doeth all things well.

*Now, therefore*, we, as the Necrology Committee of the Tri-County Medical Society, do hereby express on behalf of the society its sense of personal and public loss in the death of Doctor McCollum, and do hereby respectfully request that these resolutions be spread upon the records of the Tri-County Medical Society, and that a copy be mailed to the family of the deceased as an expression of our sympathy with them in their time of sorrow.

Done this second day of October, 1941.

(Signed) JOHN L. HANKINS, M.D.,

*Chairman.*

E. T. WEST, M.D.

## NEWS NOTES AND COMMENTS

A change in the spelling of the name "Petrolagar" to "Petrogalar" has been announced by the Petrolagar Laboratories. The change is being made in both the product name and corporate name.

Officials emphasized that no change has been made in the size of the package, price, or formulae, and each type of the product will carry the new spelling, "Petrogalar."

### CHILDREN'S BUREAU NEEDS MATERNAL AND CHILD HEALTH SPECIALISTS

Employment registers are to be established by the Civil Service Commission to fill maternal and child health specialist positions in the Children's Bureau of the Department of Labor. The examination announcement issued by the Civil Service Commission to recruit persons for these positions, which pay from \$3,200 a year to \$5,600 a year, allows the filing of applications until November 15, 1941.

Persons who wish to apply for this examination should write the commission's representative at any first- or second-class post office or the central office in Washington, D. C.

Dr. Karl Meninger, director of the Meninger Clinics at Topeka, Kansas, will deliver a lecture at the University of Tennessee, School of Medicine, on October 29, 1941, at 8:00 o'clock in the auditorium of the University Center. His subject will be "Psychiatry in the Practice of Modern Medicine."

Doctor Meninger is president of the American Psychiatric Association. He has published several books and articles for current magazines during the past several years. His book, "The Human Mind," has proven to be one of the most popular ones published during this time.

The Phi Beta Pi Medical Fraternity is sponsoring this lecture, which is the first of an annual series. Doctor Meninger was asked to give this first lecture, due to his outstanding work in this field, and due to the present interest in psychiatry as mani-



fest by the erection of a psychiatric hospital here at the University of Tennessee.

The physicians of the state are cordially invited to attend.

#### ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of \$300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association, which will be held at Atlanta, Georgia, June 1, 2, and 3, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed 3,000 words in length; must be presented in English; and a typewritten, double-spaced copy sent to the corresponding secretary, Dr. T. C. Davison, 478 Peachtree Street, Atlanta, Georgia, not later than April 1.

#### AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Those of our members interested in the work of this board and its examinations may write Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania, for particulars of the 1942 examinations.

### WOMAN'S AUXILIARY

President-----Mrs. W. W. Potter  
Knoxville  
Press and Publicity-----Mrs. Hollis E. Johnson  
Nashville

The annual fall board meeting of the Woman's Auxiliary to the Tennessee State Medical Association was held in Nashville, October 3, at the Hermitage Hotel, with the president, Mrs. W. W. Potter, presiding. The business meeting was preceded by a luncheon, at which time brief talks were made to the group by Dr. B. F. Byrd, chairman of the Advisory Council, and Dr. H. H. Shoulders, editor of the JOURNAL.

Reports were given by the officers and chairmen of standing committees, and plans

were completed for the year's work. Greetings were sent by the board to two new county organizations, Unicoi and Madison.

#### RUTHERFORD COUNTY

The newly-elected president of the Woman's Auxiliary to the Rutherford County and Stone's River Academy of Medicine, Mrs. S. B. Smith, presided over the September meeting at the home of Mrs. B. W. Rawlings. Plans for the year's program were presented to the organization. Mrs. G. B. Thackston, guest of the Auxiliary, spoke on "America in a Postwar World."

All issues of the *Bulletin* will contain important programs and articles presenting information necessary for the efficient promotion of our Auxiliary projects. Subscriptions may be sent to the *Bulletin* chairman of each county auxiliary or to Mrs. H. E. Christenberry, Highland Drive, Knoxville, Tennessee.

Your president had the privilege of attending the meeting of the Woman's Auxiliary to the American Medical Association in Cleveland, Ohio, June 2-6, at the Hotel Carter. Cleveland is to be congratulated for entertaining so successfully and simultaneously the Ohio State Auxiliary and the National Convention.

When we arrived in Cleveland we were taken to the Woman's City Club to a tea given our national president, Mrs. V. E. Holcombe, by the National Board of Directors. Too much cannot be said in praise of Mrs. Holcombe, not only as a gracious presiding officer, but also for her well-planned programs, good speakers, and her own helpful address.

The improvement of community health was the basic theme of the programs.

"What Is Sound Health Education?" was the subject presented by Miss Etta Creech, Family Health Association director.

"Health education," she said, "expressed in simple terms, means getting people accustomed to good health habits." She stressed a right attitude toward health as one of the most important items in health education. She deplored generalities in health teaching, and also brought out that



adult health education is as important as child health education.

"Nutrition—Food for Fitness" was the subject of an address by Dr. Helen A. Hunscher, Home Economics Department, Western Reserve University, Cleveland. She pointed out that nutrition has come to be recognized as one of our major national problems. Her suggestions on "What to Eat" are in the post-convention issue of the *Bulletin*.

On Monday evening a dinner was given at the Union Club, at which time the members of the National Board were guests of the Ohio Auxiliary. Following the dinner, Dr. Norman E. Yarian spoke on "Raising Rare Orchids."

At the luncheon on Tuesday past presidents were honored, and Dr. Van Etten gave the principal address. He stressed the importance of keeping up our defense against disease while we are preparing defense against a foreign foe. He urged us to lend our aid to improving housing and nutritional conditions everywhere and warned us to continue our fight against infectious diseases.

Dr. Morris Fishbein, editor of the *American Medical Association Journal and Hygeia*, urged wives of American doctors to strengthen our national defense by fighting along the line of health education in local communities.

On Wednesday was the president's luncheon, and many distinguished guests were present. Cleveland's mayor, the Hon. Edward Blythin, extended a welcome to all delegates. Hon. Hatton W. Sumners, chairman of the Judiciary Committee, Washington, D. C., called to our attention the seriousness of the present world situation, and our need for a more concerned attitude toward it.

Another speaker at the president's luncheon was Dr. W. W. Bauer, director of the Bureau of Health Education, American Medical Association. He paid tribute to the work done by our organization in improving health conditions in our local communities. He also gave us credit for having greatly increased the circulation of *Hygeia*.

Thursday evening we attended the annual dinner for members, husbands, and

guests. Dr. Arthur Booth, chairman of the Advisory Council of the Woman's Auxiliary, and Joseph S. Newman, author and humorist, were the principal speakers. Their speeches and stories were of the humorous variety, and the period of relaxation was enjoyed. After the dinner, a reception and ball at Hotel Cleveland honored the president of the American Medical Association.

Business meetings were held each morning during the convention and were well attended. Routine business and organization work were the principal subjects of discussion.

On one occasion Mrs. H. E. Christenberry of Knoxville arranged for the forty state presidents in attendance to march to the platform, each carrying her state flag. This was a new and impressive ceremony. At this time each state president gave her report.

Exhibits of the activities of the different auxiliaries were on display in the aviation room under the supervision of Mrs. Ily R. Beir.

Time permits me to mention only a few of the speakers and programs, but it is my hope that I have given you some idea of the interesting and profitable time we had. As for your president, she returned with a much better conception of the extent and importance of our work and of our opportunities for service to our communities and to the medical profession through our auxiliary.

## MEDICAL SOCIETIES

### *Anderson-Campbell Counties:*

The Anderson-Campbell Society was addressed by Dr. Jack Chesney and Dr. R. Swepson Leach at their last meeting.

### *Davidson County:*

September 16—"Regional Enteritis," by Dr. C. C. Trabue. Discussion by Dr. Murray B. Davis.

September 23—"Early Medical History of Nashville," by Dr. T. V. Woodring. Discussion by Dr. Owen H. Wilson.

Case Report: "Stewart-Morel Syndrome," by Dr. J. P. Gilbert. Discussion by Drs. C. M. Hamilton and H. B. Brackin.

# NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY

The Nashville Bar Association, the Nashville Academy of Medicine, and the Davidson County Medical Society held a joint meeting and fish fry atop "Nine-Mile Hill" at Hettie Ray's Dinner Club, Tuesday evening, September 30, 1941. Dr. Hiram A. Laws, Jr., of Chattanooga, president of the Tennessee State Medical Society, was guest of honor. This, a most successful meeting and program, was "topped off" with all the boneless fish, cornbread, and all the trimmings one could wish for.

The idea of this meeting had origin, apparently, simultaneously with the leaders of the two groups. In so far as is known, it constitutes the first step that has been made in this county to bring the two groups together. While their work is radically different in many respects, it is recognized that, as professional men, the two groups have many common interests. It is hoped that this is the first of many joint meetings to follow, at which serious subjects shall be considered.

## *Dyer, Lake, and Crockett Counties:*

The regular monthly meeting of the Dyer, Lake, and Crockett Counties Medical Society met October 1. The following papers were read:

"Treatment of Tetanus," with case report, by Dr. W. E. Anderson, Dyersburg. Discussion opened by Dr. J. Paul Baird, Dyersburg.

"Modern Methods of Treatment in Commonly Encountered Malignancies," by Dr. J. Cash King, Memphis. Discussion opened by Dr. J. B. Baird, Dyersburg.

"The Repair of Third Degree Lacerations of Perineum," with moving picture, by Dr. Wilson Searight, Memphis. Discussion opened by Dr. E. H. Baird, Dyersburg.

J. B. COCHRAN, M.D., *Secretary*.

## *Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

We had a very interesting meeting at Waynesboro on September 30. The following papers were read:

"The Management of Congestive Heart Failure," by Dr. W. E. Boyce, Flatwoods.

"Diagnosis and Treatment of Goiter," by Dr. L. C. Sanders, Memphis.

Dr. T. S. Weaver of the State Department of Health gave a short talk on the importance of "Birth and Death Certificates."

The next meeting will be held in Waynesboro on October 28 with special entertainment in the way of a fish fry.

O. H. WILLIAMS, M.D., *Secretary*.

## *Knox County:*

We have received a tentative program from the Knox County Medical Society covering the meetings for the remainder of this year. Subjects and dates of past events and those for the next month are listed as follows:

September 16—"Vital Statistics," by Dr. Don C. Peterson.

September 23—"Symposium—Poliomyelitis." "Clinical Description," by Dr. Joe T. Smith; "Pathological Anatomy," by Dr. Ralph Monger; "Treatment," by Dr. Herschel Penn. Discussed by Dr. Jack Chesney and Dr. Robert Brashear.

September 30—"Rheumatic Fever," by Dr. Robert P. McCombs.

October 7—"Anesthesia," by Dr. Spencer Bell. Discussed by Drs. Charles Armstrong and H. L. Kitts.

October 14—"Ear Infections," moving pictures, by Dr. R. G. Reaves. Discussed by Drs. F. S. LeTellier and W. J. Irwin.

October 21—"Type of Case and Operation of Choice in Pulmonary Disease," by Dr. Herbert Acuff. Discussed by Drs. Waterman and J. B. Naive.

October 26—Dr. Hiram A. Laws, Jr., Chattanooga, president of the Tennessee State Medical Association.

November 4—"Hypertension—Pathological Physiology," by Dr. Sam Cooper; "Eye Changes," by Dr. H. E. Christenberry, Jr.; "Medical Treatment," by Dr. Rufus Smith; "Surgical Treatment," by Dr. C. L. Chumley. Discussed by Dr. Bruce Powers and Dr. J. B. Ely.

November 11—"Episiotomy," by Dr. Tom Drinnen. Discussed by Drs. Richard McIllwaine and H. D. Peters.



*Shelby County:*

The Memphis and Shelby County Medical Society met October 7. The following papers were read:

"The Clinical Significance of the Acetone Bodies," by Dr. L. A. Crandall. Discussed by Drs. W. T. Swink and J. A. McIntosh.

"Some Phases of Sterility," by Dr. W. W. Walker. Discussed by Drs. C. G. Bringle and J. M. Brockman.

Case reports: "Undulant Fever Treated with Stock Vaccine," by Dr. L. A. Kasselberg.

"Dinitrotoluene Poisoning," by Dr. R. L. Bourland.

*Washington, Carter, and Unicoi Counties:*

The regular monthly meeting of the Washington, Carter, and Unicoi Counties Medical Society was held Thursday, September 4, at 7:30 P.M., at the Franklin Club in Elizabethton.

Dr. Hiram A. Laws, Jr., president of the Tennessee State Medical Association, was a guest of the society and addressed the group.

A Dutch-type dinner was given by members of the society, honoring Doctor Laws. Fifty members and guests were present.

Dr. Thomas S. Weaver, from the State Health Department, addressed the society on the subject, "The Role of the County Medical Society in the Registration of Birth and Death Certificates."

Doctor Laws was introduced by Dr. C. W. Friberg of Johnson City, East Tennessee vice-president of the Tennessee State Medical Association.

Dr. Marion G. Fisher of Jonesboro was elected to membership in the society.

The next regular meeting of the society will be held October 2, 1941, at Elizabethton, at which time Dr. M. A. Johnson of Roanoke, Virginia, will be the guest speaker.

The regular monthly meeting of the Washington, Carter, and Unicoi Counties Medical Society was held at 7:30 P.M. in the dining room of the Franklin Club, Elizabethton, on October 3, 1941.

Dr. Marcellus Johnson of Roanoke, Virginia, assistant chief surgeon of Norfolk & Western Railroad, gave an interesting illustrated lecture on the subject, "The Use

of Hardware in the Treatment of Fractures in 1941-42." Doctor Johnson discussed many questions asked by members of the society relative to the treatment of fractures by open reduction.

Thirty-eight members and guests were present. The scientific program was preceded by a Dutch-type dinner in the dining room of the Franklin Club.

Dr. W. H. Cave of Jonesboro was elected to active membership in the society.

The president announced the November meeting would be held at the hospital of the Veterans' Administration Facility.

H. B. CUPP, M.D., *Secretary*.

## OTHER MEDICAL SOCIETIES

**The Fiftieth Anniversary of the Association of Military Surgeons of the United States will take place in Louisville, Kentucky, October 29 through November 1. Headquarters at Brown Hotel.**

**An excellent program has been prepared. All who are interested in medical military preparedness should plan to attend this meeting.**

## SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association will hold its next meeting in St. Louis, Missouri, November 10, 11, 12, 13.

The Program Committee has selected a number of vital subjects, which are to be handled by some of the best men in America.

Every doctor who can possibly do so should be present in St. Louis for this meeting.

The Middle Tennessee Medical Association's semiannual meeting will be held at Murfreesboro in the Rutherford County Public Health Building, November 20, 1941.

For further information, write Dr. Rollin A. Daniel, Jr., secretary.

The Tennessee Section of the Southeastern Surgical Congress met at the New Southern Hotel, Jackson, on October 7, 1941.

The committee in charge of the meeting



was Dr. Herbert Acuff, Knoxville, chairman; Dr. James W. McClaran, and Dr. Glenn D. Batten of Madison County.

The program was as follows:

"Acute Appendicitis," by Dr. Glenn D. Batten, Jackson. Discussed by Dr. Irvin Abell, Jr., Louisville, Kentucky.

"Salpingitis," by Dr. W. G. Rhea, Paris. Discussed by Dr. L. E. Burch, Nashville.

"Collapse Therapy in Pulmonary Tuberculosis," by Dr. George D. Boone, Paris. Discussed by Dr. Herbert Acuff, Knoxville.

Address: "Future of the Southeastern Surgical Congress," by Dr. B. T. Beasley, Atlanta, Georgia.

"Perforated Peptic Ulcer," by Dr. Charles Webb, Jackson. Discussed by Dr. R. L. Sanders, Memphis.

"Breast Tumors," by Dr. John W. Oursler, Humboldt. Discussed by Dr. T. C. Davison, Atlanta, Georgia.

"Kidney Pain," by Dr. Julian G. Price, Dyersburg. Discussed by Dr. Thomas D. Moore, Memphis.

Officers elected for the coming year for the East Tennessee Medical Association were:

President—Dr. D. R. Roach, Morristown.

Vice-Presidents — Dr. Walter Hankins, Johnson City; Dr. Thomas Roberts, Sweetwater.

Secretary-Treasurer—Dr. J. M. McCulloch, Maryville.

The meeting in 1942 is to be held at Cleveland, Tennessee, on the second Thursday and Friday in September.

#### ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, OCTOBER 3, 1941

1. Case report: "Dermatomyositis — Presentation of a Case," by Drs. Laurence Grossman and B. V. Jager.

Patient was a fifty-nine-year-old white farmer with muscle pain and stiffness, sclerodermal thickening of the skin, Raynaud's phenomenon of the extremities. These symptoms had appeared during the past eight years.

On examination there was generalized muscle atrophy, the girdle musculature be-

ing particularly implicated. Cardiac and respiratory muscle function was impaired. Laboratory studies revealed eosinophilia and creatinuria. Skin temperature observations showed characteristic Raynaud's response. There was no electrical reaction of degeneration. Biopsy of skin and muscle showed changes compatible with dermatomyositis.

Dermatomyositis was briefly discussed with regard to clinical manifestation, laboratory investigation, and pathological changes.

This case was discussed by Drs. E. W. Goodpasture, Hugh Morgan, and Barney Brooks.

2. "Experiences in Europe, Scientific and Otherwise," by Dr. John B. Youmans.

Because of war-time conditions in Europe, the Rockefeller Foundation in July, 1940, organized a Health Commission under the direction of its International Health Division to cooperate with government agencies in public health work. Some of the experiences of this commission, and in particular its work in nutrition in cooperation with the French Public Health Service, is presented.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Impurities in Ether. H. H. Bradshaw. *American Journal of Surgery*, September, 1939.

This article deals with a death in convulsions that occurred during administration of nitrous oxide, oxygen, and ether. A specimen of blood obtained before death upon examination showed an oxygen content of 6.9, oxygen capacity of 14.6, a saturation of 47.3, and a carbon dioxide content of sixty-one volumes per cent. The concentration of sugar was 400 milligrams per hundred cubic centimeters of blood while intravenous dextrose was being administered.

On analysis of the ether used the only impurity found was aldehyde, which was present in amount of 1:50,000. In an effort of resuscitation pure oxygen was administered for ten minutes and the cyanosis became greater and the convulsions continued. The cause of this disaster could not be laid upon excess carbon dioxide, hypoglycemia, or lack of preoperative medication. The only positive

observation was a low oxygen content of the venous blood despite the administration of 100 per cent oxygen.

## FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

### The Relief of Neuritic Pain by Artificial Fever Therapy.

The authors had previously reported the outstanding relief of intractable lancinating pains in tabes dorsalis obtained by combined fever and chemotherapy. This success caused them to treat a variety of painful neuritic and radicular affections by artificial fever therapy. They present extensive clinical evidence (forty cases) that artificial hyperpyrexia is a valuable therapeutic aid in relieving painful neuritic, myalgic, meningitic, and radicular states. The treatments were given at lower temperature levels, 103 to 105 Fahrenheit for two to four hours each, two to six treatments.

All types of neuritic pain were relieved immediately, but pain recurred in some cases, especially in the secondary neuritides from compressive lesions. Fever therapy seems to be a distant advance over all local forms of heat production in combating pain. However, it is not recommended to replace other accepted forms of therapy in neuritis, but only as an aid in the management. It probably hastens convalescence in the severe toxic, infectious, and polyneuritic states.

The authors recommend fever therapy as a safe, efficient means of relieving all types of neuritic and radicular painful affections. Its use should be limited to institutions completely equipped, and with a trained personnel familiar with its potential dangers.

## INTERNAL MEDICINE

By R. B. WOOD, M.D.  
By D. R. THOMAS, M.D.  
Medical Arts Building, Knoxville

Effects of Anorexia in High Altitude Flight on the Electrocardiogram. Captain M. S. White, Medical Corps, United States Army. Junior Aviation Medicine, December, 1940.

Forty normal persons were exposed to an altitude of 15,000 feet for two hours and to 20,000 feet and studied by means of the electrocardiograph.

There was noted an increase of rate at 5,000 feet and a decrease in voltage that increased with increasingly higher altitudes. Less changes were noted with slower ascent, and apparently compensatory mechanisms were noted during a sustained flight at 15,000 feet. All changes were removed by oxygen inhalation. The author suggests the use of oxygen at 5,000 feet for all flying personnel to insure a physiologically normal individual, but 7,500 feet would be the minimum level above which oxygen should be required.

A New Type of Graduate Course in Internal Medicine. M. L. Crone, M.D., and J. H. Means, M.D., Boston, Massachusetts. *Annals of Internal Medicine*, June, 1941.

A new type of graduate course is described wherein young physicians, preferably with a few years' general practice, are given courses of a practical nature. Costs are held down by the possibility of partial payment by work in the out-patient clinics, etc., while increasing at the same time the man power of the hospital. This year of training is also acceptable as one of the years prescribed by the Board of Internal Medicine.

Listed as course No. 240 by the Harvard Medical School Courses for Graduates, six physicians are selected for one year. They spend part time in the out-patient department under supervision and are rotated each three months through various medical clinics. Assignment to house medical services are given where rounds are made with visiting physicians. Clinic, pathological conferences, courses in pathology, cardiology, etc., participation in staff meetings are part of the schedule. The student is further stimulated by being made responsible for reporting articles of significance in current literature, and by being given topics of interest on which he reviews current literature and reports at weekly conferences.

## OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Inhibition of Lactation with Stilbestrol. Evri B. Mendel, M.D.; Allan M. Goldman, M.D.; and Arthur Caire, Jr., New Orleans, Louisiana. *American Journal of Obstetrics and Gynecology*, 528-530, September.

This study deals with the administration of stilbestrol orally in order to determine its efficacy in inhibiting lactation. Fifty-five cases, forty-four of which were primigravidas, requiring drying of the breasts, were selected. Indications for the suppression of lactation were death of the fetus, breast abscess, sore nipples, etc. Three nursing patients with severe painful engorgement were also given stilbestrol. During the period of treatment, the patient's fluid intake was not restricted, tight binders were not employed, and strong purgation was omitted. The authors make the following conclusions: (1) Stilbestrol by the oral route has been efficacious in fifty-four cases (ninety-eight per cent) to inhibit lactation; (2) an average dose of twenty milligrams in the nonengorged breasts and thirty milligrams after engorgement or lactation appeared to give satisfactory results without supportive treatment in ninety-one per cent of the cases; (3) some complicated cases (seventeen per cent) will require additional therapy with the drug; (4) nausea and vomiting in one case (two per cent) was the only toxic effect of the drug noted; (5) stilbestrol will alleviate pain and engorgement in the nursing mother without inhibiting lactation; pre-eclampsia and toxemia of pregnancy before



delivery do not contraindicate the use of stilbestrol; (7) in one case, stilbestrol did not affect the daily insulin requirement of a severe diabetic patient.

**The Effect of Intramuscular Injections of Whole Blood on the Prothrombin Index of the Newborn Baby.** Sidney S. Gellis, M.D., and Robert A. Lyon, M.D., Cincinnati, Ohio. *American Journal of Obstetrics and Gynecology*, 519-522, September.

The value of intramuscular injections of whole blood in the prevention and treatment of hemorrhagic disease of the newborn infant has been questioned for many years. Now that the majority of hemorrhagic diseases of the neonatal period have been shown to be due to deficiencies of prothrombin, it is important to measure the influence of intramuscular injections of blood upon the prothrombin indices. The prothrombin indices of seventy-eight newborn breast-fed infants were determined for the first five days of life. Forty-four of these infants received intramuscular injections of whole blood and thirty-five did not. Charts accompanying the communication give a graphic comparison of the different groups. When the prothrombin indices of the two groups were compared, it was observed that single intramuscular injection of twenty cubic centimeters of maternal blood had little or no effect in checking the decline of the prothrombin index during the neonatal period or in hastening its return to normal values.

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Treatment of Gonorrheal Diseases of the Eye with Sulfanilamide.** C. R. Mullen. *American Journal of Ophthalmology*, September, 1941.

A series of forty-two patients treated with sulfanilamide included fourteen infants with gonorrheal ophthalmia neonatorum and twenty-eight patients with gonorrheal infection of the conjunctiva and cornea. All of the fourteen infants were discharged without corneal involvement, but in the other group were five patients with corneal complications. The results show a remarkably lessened incidence of corneal complications and a decrease in the duration of hospitalization. Treatment now used at the Philadelphia General Hospital is sulfanilamide internally in doses of one to two grains per pound of body weight, but never more than 100 grains the first twenty-four hours; and irrigations of the involved eye with two per cent boric acid solution followed by free instillation of .8 per cent sulfanilamide at ten-minute intervals day and night. After the first twenty-four hours, the internal dose of the drug is decreased to .25 or .5 grain for each pound of body weight, and local irrigations are continued at increased intervals. Treatment also includes the use of atropine-sulphate solution, iced compresses for ten minutes every hour, and the use of a Buller shield when only one eye is involved. Patients are

considered ready for discharge after negative smears on three successive days.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

**Prognosis in Silicosis.** J. T. Farrell, M. J. Sokoloff, and R. Charr. *American Journal of Roentgenology and Radium Therapy*, Vol. 44, No. 5, p. 709, November, 1940.

The study is based on the case records of 511 cases of anthracosilicosis occurring in miners who were admitted to White Haven Sanatorium. They conclude:

1. In a study of 511 anthracite coal miners with silicosis, it was found that only seventy-seven were discharged as improved, while 243 were unimproved and 191 died.

2. The ages of those who improved and those who died varied from fifteen to sixty-nine years, with the majority in the fourth, fifth, and sixth decades in those who had worked from eighteen to twenty-three years.

3. Emphysema is the most common complication, and, when extensive, prognosis is unfavorable.

4. The second most common complication is tuberculosis. The prognosis in the first and second stages of silicosis complicated by tuberculosis is the same as in nonsilicotic tuberculosis; but in stage three, the prognosis is made much worse. Patients with clinical tuberculosis, but with negative sputum, have a better prognosis than those with clinical tuberculosis and positive sputum.

5. The roentgenologic changes most suggestive of tuberculosis are asymmetrical consolidation and cavitation, regardless of the findings in the sputum.

6. Lobar pneumonia terminates fatally more often in patients with silicosis than in nonsilicotic patients.

7. Heart disease, which is a common accompaniment of silicosis, has a characteristic clinical course and makes the prognosis unfavorable. The most common type is myocardial degeneration.

8. Miners with clinical symptoms of myocardial disease and roentgenologic evidence of cardiac enlargement without symptoms and toxemia usually suffer cardiac deaths. Those with clinical and roentgenologic signs of heart disease, but with marked toxic symptoms of tuberculosis usually die rapidly of the latter disease.

9. Spontaneous pneumothorax occurs more frequently in silicosis complicated or uncomplicated by tuberculosis than in any other pulmonary disease; it was present in twenty-two instances in the total series. It may be bilateral and affect the prognosis unfavorably.

10. Carcinoma of the bronchus, although not a common complication, makes the prognosis hopeless.



## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Asymptomatic Renal Destruction with a Discussion of the Neurophysiology of Pain Production in the Kidney. S. S. Malisoff, I. R. Light, and M. B. Macht. Department of Urology, Beth David Hospital, New York City. *Journal of Urology*, August, 1941.

A knowledge of the neurophysiology of renal pain production is necessary in order to understand asymptomatic kidney disorders.

The nerve supply to the kidney is divided into extrinsic and intrinsic nerves.

The extrinsic nerves are derived from the renal plexus which extends from the aortic plexus along the renal artery to the hilum of the kidney. It is composed of branches from the coeliac ganglion, aortic plexus, lower splanchnic nerve, branches from the adrenal plexus, and fibers from the vagus nerve. The afferent fibers are mainly from the tenth, eleven, and twelfth thoracic nerves.

The intrinsic nerves enter the kidney from the renal plexus and accompany the artery and its branches, around which they form plexuses. The afferent nerves terminate in the muscle fibers of the renal pelvis and calyces, renal arteries and capsule. Myelinated fibers occur in abundance in the renal pelvis and calyces, but are largely unmyelinated in the parenchyma.

Renal pain arises in the region of the renal pelvis. The parenchyma may be torn without pain unless the pelvis is affected.

These authors are of the impression that very little pain arises in the region of the perirenal peritoneum or the renal capsule. Afferent pain impulses are conducted through the renal plexus and reach the spinal cord by way of the splanchnic nerve trunk.

From this review it is obvious that if the afferent nerve endings for pain in the kidney pelvis are in some way destroyed, the individual may carry a diseased kidney for years without experiencing pain.

The authors report a case of a female forty-seven years of age apparently in good health, who consulted her physician because of a heavy sensation in the right loin, associated with diarrhea at times, and an occasional incontinence. There were no definite urinary symptoms of pain present. Urinalysis showed a faint trace of albumin, a few white blood cells, and red blood cells. Examination revealed a mass in the right kidney region, which proved to be renal in origin. Right nephrectomy demonstrated a large hydronephratic kidney resulting from a small stone in the upper ureter. Upon further questioning it was revealed that the patient had had mild attacks of pain in the right kidney region twenty years previously, but not sufficient to seek treatment.

This patient illustrated a case of asymptomatic renal destruction caused by a small ureteral calculus, probably of twenty years' standing, and also demonstrates the importance of a complete urological checkup in patients with indefinite symptoms.

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## AVIATION MEDICINE AND NEW STRESSES IN FLYING\*

CAPTAIN J. C. ADAMS, (M. C.), U. S. N., Head, Division of Aviation Medicine, Navy Department

In the application of the medical and allied sciences to modern war it is imperative they be adapted or geared to the evolution of new principles and instruments of the war itself. Methods and means of waging war have never remained static. It is, therefore, essential that medicine in warfare be equally progressive.

Aviation medicine is a striking illustration of this principle. Here is a specialty which may be regarded as a development of the first World War. Its evolution at that time was the natural result of the first use of aircraft as an instrument of war. Its present and increasing importance is likewise due to the tremendous role aviation has come to play in the present war.

Aviation medicine, as we regard it today, may be broadly defined as an inclusive specialty in the application of the medical and allied professions to the problems peculiar to aviation. To further illustrate the significance of these statements I would like briefly to contrast the picture of aviation in the last World War with that of today.

In 1914 there was no such thing as a military air force. Such planes as were first introduced for this purpose were slow of speed and extremely limited in total performance. We had little or no knowledge concerning the physical and emotional

stresses encountered in flying, and, therefore, we had little information upon which to establish physical standards for the selection of flying personnel. This picture changed rapidly. By 1917 aviation had progressed to that of considerable importance. It was this rapid advance in aircraft performance that attracted attention to the physical and emotional stresses imposed on the pilots. The situation at first was confused and distressing. There were inadequate provisions for artificial oxygen supply at high altitudes. Cockpits were exposed, and pilots were subjected to the effects of extreme cold. There were no adequate safeguards against exposure to carbon monoxide in motor exhaust. Pilot fatigue and staleness were virtually unrecognized, and adequate standards for the physical selection of flying personnel had not been developed.

The early attrition due to crashes and neuroses among students and pilots was alarming. It was this general state of affairs that culminated in a program of intense medical research in this country and abroad, and to the adaption of administrative measures to improve the situation.

As a result of this action, many things were accomplished. Comprehensive standards for the physical and psychological selection of flying personnel were established. A wealth of information was acquired concerning the effects and importance

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\*Read before meeting of Southern Psychiatric Association, October 7, 1941, Nashville, Tennessee.



of anoxia. Oxygen-supply apparatus was provided; flight gear, such as clothing and goggles, was improved; and many other scientific studies relating to physiological changes induced by low barometric pressure and anoxia were accomplished. A development of equal importance was the recognition of staleness or effort syndrome among pilots and the need of medical personnel specially trained to serve with the air forces. In brief, we have here the evolution of aviation medicine and the development of the flight surgeon.

Unfortunately, with the close of the World War, major research in aviation medicine and, in general, all matters relating to war developments ceased. During the intervening years, the trend in most countries has been virtually the same, i.e., a complete reversion to everyday problems of peacetime existence. However, information indicates that Germany for the past several years has engaged in intensive research. Especially is this true with regard to aviation and aviation medicine, and this brings us to a consideration of our present position in this regard.

We may ask, what are our problems in aviation medicine, and what are we doing about them? The answer is, we have a number of hard problems facing us, and we are virtually pooling every scientific means, at home, in Canada, and in England, for their earliest solution. In the World War flight operations seldom exceeded twenty or twenty-five thousand feet in altitude and were limited to short duration.

Today planes fly at four hundred miles an hour. They operate at extreme altitudes above 30,000 feet, and we are trying desperately to push them to 40,000 and above. Our long-range bombers and patrol planes are capable of sustained flights of over twenty-four hours, with large crews and complex missions. Night operations are extensive, and operations at sea from carriers and other ships are a special consideration. The net result is that the stress encountered in flying has greatly increased; in fact, modern aircraft performance has come to exceed the capacity of the human element at the controls.

To further present the picture, the situation is this. Flights to extreme altitude extending beyond 30,000 feet completely reopen the oxygen-supply problem. Ordinary provisions normally adequate to 25,000 feet are simply not adequate for the higher altitudes. Therefore, we have a real problem in the matter of improved oxygen supply for use at extreme altitudes. Further, if we are to go beyond 40,000 feet, we approach the critical levels where even 100 per cent oxygen at prevailing barometric pressure will no longer suffice. It becomes necessary to supply oxygen under pressure, resorting to an enclosed pressurized suit or cabin.

We now have a new problem associated with flights to extreme altitudes; namely, bends or aeroembolism. The condition is entirely the same as encountered in caisson disease or from deep-sea diving, except here we are concerned with rapid decompression from one atmosphere. Extreme altitudes introduce the added complications from expansion of gases in the intestinal tract and accessory sinuses. That this may amount to as much as 300 per cent or more is indicative of the practical importance in regard to pilot comfort and efficiency. Low temperature and extreme cold at high altitudes result in serious discomfort with impairment of morale and efficiency. In addition to the foregoing, we have increasing information indicative of other physiological changes induced in the body as a result of disturbance of carbon-dioxide balance and other body adjustments following exposure to extreme altitude. One indication of this is suggested by the extreme fatigue and lethargy so frequently experienced following flights of this kind, regardless of the adequacy of oxygen used during the flight.

Dive bombing and other aerial maneuvers in high-speed planes subject the pilot to tremendous gravitational stress of five or six or more G. This means that a pilot is subjected to five or six times his weight. Under these conditions he is helpless to a great degree. The important effect is upon the circulation, resulting in inadequate blood supply above the heart level and a resulting failure of vision, blackout, and

even temporary unconsciousness if sustained. This is an important matter requiring the most serious consideration.

Extended night operations have stressed the importance of good night vision and, therefore, laid open the whole question of dark adaptation in the selection of pilots for this work, particularly with regard to standards for selection of personnel and improvement in cockpit illumination.

Pilot fatigue, staleness, and aeroneurosis are conditions to be dealt with among personnel, especially those engaged in hazardous and strenuous flying. This is a most important matter, requiring the careful supervision of the flight surgeon. Early detection of these conditions offers the best means of timely corrective measures and, thereby, the salvaging of valuable experienced pilots.

Improvement in methods of selection of flying personnel is another problem receiving intensive study. Modern aviation requires not only the physically fit, but a stable and resourceful personality. It is relatively easy to pass upon the physical qualifications of an individual, but it is difficult to say with assurance that an individual possesses the psychological aptitude to become a stable and resourceful pilot. The Navy is conducting extensive studies to improve our approach to this problem.

These are by no means the total of aviation medical problems confronting us. We still have problems relating to noise, vibration, and glare. There is further need for improvement in safety devices, instrument-panel arrangement, and cockpit lighting. Further improvement in clothing and flight gear is indicated. In addition, there are administrative problems incident to aeronautical advancement and expansion.

This brings us to the important subject of the care of the pilot. It is clear that we have a highly-selected population group engaged in a hazardous vocation. These individuals are actively engaged in a profession which requires a constant vigilance and high degree of perfection in the performance of their duties. It must be clear that even among those pilots of unquestionable

skill and maximum adjustment there are always at play the latent apprehensions of danger. As Armstrong has expressed it, "apprehension, anxiety, and fear are simply three stages of comprehension of danger, and it is common knowledge that each results in profound nervous and mental depletion." It is not unreasonable, therefore, to appreciate some limit in flying time, beyond which the most stable person will show evidence of deterioration. This limit varies with the individual, and considerably so, depending upon the nature of the flying performed. Generally speaking, about eighty-five hours in a month is considered as a generous task.

As previously stated, modern military aircraft is now so advanced that actually it can exceed in performance the capacity of the human element. The stresses to which the pilot may be subjected are great. When we take into consideration the effect of prolonged noise, vibration, glare, and extreme cold, added to the emotional stress accompanying such flights, we have an explanation for the first condition frequently to be encountered among aviators, namely, fatigue.

Fatigue, as used here, does not refer to strictly physical fatigue as normally regarded, but to that condition commonly occurring among normal, healthy pilots as a result of flying stress. It is primarily neurogenic and rapidly tends to become accumulative. It is not measured in diminished capacity to do work, but rather in the diminished will to work. These individuals do not recover their forces in the course of the average rest periods. They are tired on awakening; their morale suffers; they cease to be alert, and they suffer indifference to details. In the course of time they become inefficient and dangerous in their flying. If neglected, the picture progresses to profound staleness, and in their effort to carry on in the face of a growing sense of inadequacy, the syndrome may merge into a neurosis.

These cases, when detected in time, promptly respond to physical rest and relief from flying. Their basic usefulness and attitude toward flying are usually not permanently impaired.



Now, in any average population group we may expect a certain incidence of neuroses. This is true among pilots, and Armstrong separates them into two main groups. First, neurosis that develops in relatively healthy, stable pilots, and which is found only among pilots. Armstrong refers to this condition as *aeroneurosis*. The second group are those neuroses developing among relatively unstable pilots, and which are more permanently disabling and are identical with the neuroses seen in general practice. *Aeroneurosis* is a chronic functional nervous disorder characterized by gastric distress, gas-tralgia, nervous irritability, fatigue of the higher mental centers, insomnia, and increased motor activity. Emotional stress associated in flying appears to be the underlying cause of the condition. Probably the most characteristic symptoms are the stomach complaints (*aviator's belly*) and the increased motor activity. The latter symptom, so especially characteristic of *aeroneurosis*, is in contrast to the sense of weakness and lassitude seen in ordinary *neurasthenia*. The emotional stress leading to these conditions may be associated with flying or may arise from conditions in private life, or the combination of the two. Frequently the original exciting cause is a severe crash, or psychic shock as when viewing a severe crash in which the remains are badly mangled, etc. The fear complex, associated with the instinct of self-preservation, and the need to carry on in spite of these reactions are factors at play. Situations in the domestic life are important factors. Debt, illness, domestic troubles, etc., are most important. The syndrome and its effects are an interesting development. Time will not permit of a detailed discussion in this regard, but the treatment of these cases is more complicated than would first appear. Complete relief from flying and change of environment are usually required. This is further complicated by the associated anxiety over the possibility of losing flight orders and thereby suffering a reduction in pay. Recurrence of the syndrome is frequent on return to flying. Obviously, early detection and treatment are essential, if the pilot is to be permanently restored to flying duty.

Under conditions of war the anxiety states and situational neuroses occur more frequently. In fact, the emotional situation confronting the pilot under actual war conditions is such that the percentage of pilots affected in one degree or another is often relatively high. Hysteria, which is not common among pilots who have completed training, is more frequently encountered under training conditions and in time of war. We have found by experience that success for all such cases is largely preventive. Aside from careful selection of personnel, this can best be accomplished by trained medical officers who have a broad and practical aviation experience and background. Since the picture is subclinical, it is essential that these officers come to know intimately their pilots. They must live close to them and share their experiences, if they are to obtain their confidence. An experienced flight surgeon has a practical grounding in psychiatry, but more than this, he must have a practical conception of his mission. Pilots are normal individuals, and they resent being spied on, "psyched," as they call it, as if they were cracked in the head, and unless the bonds of relationship between them and their medical officer are healthy and natural, they will evade him and conceal their difficulties. When a case has progressed to that point, where the average clinician can see there is something wrong, it has usually gone too far for the pilot to be restored to useful flying. Detection must come much earlier and can best be accomplished by the flight surgeon, who flies with his men and understands at first hand the true dilemma of his patient.

Lastly and important, the Navy has established and is operating a school of aviation medicine at Pensacola, where we train our flight surgeons. This has an important bearing on selection and care of pilots. Our syllabus of training is unique, and I think well adapted to the best results. Briefly, the course for flight surgeons extends over a period of about five months. It consists of three parts. Part one is of two months' duration devoted to indoctrinal flight training, in such manner that the student passes

through an abbreviated experience in all phases of flying prescribed for a naval aviator. The object is not to train the student to fly, but to enable him to experience at first hand the stress encountered in flying. Phase two is entirely devoted to the subject of aviation medicine and is of two months' duration. Phase three consists of one month of practical work and indoctrination. By these means we are trying to place with our air forces trained personnel who are best qualified for their duties.

These are some of the measures adopted. There is much yet to be accomplished, but we are making progress. Many of these problems are not new. They have been a subject of study for quite some time. However, the present emergency requires their earliest solution. Fortunately, the President's executive order establishing the office of Scientific Research and Development, with its Committee on Medical Research, provides the authority and means of pooling our efforts and advancing these studies.



## MEDICINE AND THE CHANGING ORDER: A CONDENSED REPORT ON THE STATUS OF AMERICAN MEDICINE AND THE OPERATION OF THE NATIONAL PHYSICIANS COMMITTEE

On Friday, October 10, newspapers throughout the United States published a report, emanating from the White House, reading in part as follows:

"President Roosevelt today launched a program to 'salvage' 200,000 of the million young men of draft age who have been rejected for military service. Under the plan the government will pay medical costs for treatment by local physicians."

The acceptance of this program represents a real and significant gain for the medical profession. It is the latest of a series of victories which, combined, have greatly strengthened medicine's position.

On October 14, 1939—two years ago—the first letters and literature were mailed to physicians from the offices of National Physicians Committee. The establishment of this agency is evidence of the fact that, at an earlier date and to a greater extent than any other group in the United States, American medicine sensed and began to understand the need for and potential value of *educational propaganda*. (See Doctor Fishbein's statement, *New Conditions Demand New Techniques*.)

In October, 1939, the Wagner National Health Bill was still before the Senate Subcommittee on Education and Labor. The American Medical Association was awaiting trial in a federal court. Five officers of the American Medical Association and fourteen other physicians of Washington, D. C., were under federal grand jury indictment on a charge of criminal conspiracy to restrain trade.

There were many physicians who were in doubt as to the soundness of our system of medical practice. A powerful lobby, headed by professional welfare workers and with powerful friends at court, was effectively active in state capitals and in Washington. Proposals were made which would have revolutionized the practice of medicine in the United States, including the placing of the distribution of medical care in the hands of laymen or lay groups.

The National Physicians Committee was established. Three well-defined tasks were undertaken:

1. Clarifying the basic issues to a point of understanding for and within the profession.
2. Promoting the extension of the distribution of high quality medical care.
3. Educating the public to a point of understanding on the basic meaning of and the effective results from our system of independent medical practice.

### WIDESPREAD COOPERATION

The establishment of National Physicians Committee, supplementing the efforts of existing medical organizations, stimulated medical journals in almost every state to the publication of articles and editorial comment on or in connection with the importance and effectiveness of our system of distribution of medical service.

As a new agency it aided in creating widespread discussion of this vital issue within county and state medical society groups. These discussions led to a clarification and understanding of the issue and toward unifying the profession. They stimulated local medical societies to undertake the providing of medical care on a cooperative or a prepayment basis. More than two hundred of these plans have been undertaken—two of them, the California Medical Service and the Michigan Medical Service, on the basis of state-wide operation under medical association sponsorship.

These efforts have been vitally important. They have provided medical care for many thousands of people in lower income groups. More important, they have provided conclusive evidence of the fact that the medical profession has been and is fully aware of and alive to its grave and exclusive responsibility; namely, the providing of the highest possible medical care to all the people at the lowest possible cost. Further, and of even greater value, the experimental efforts have demonstrated that there is no panacea for the problem of medical care.

The two vital factors remain—the doctor and the patient.

### EDUCATIONAL EFFORTS

Early in 1939 the National Physicians Committee began its educational efforts. Approximately one million letters were mailed, a series of booklets and reports were issued and distributed to a total of approximately two and one-half million copies. These included "The Achilles Heel of American Medicine," the "Minutemen of American Medicine," "The Priceless Heritage," "Statement of Post-Election Position, Program, and Policy," "The Two Essentials for American Medicine," and "New Conditions Demand New Techniques."

Two two-page advertisements in color were published in the *Saturday Evening Post*. Full-page advertisements were published in nearly 100 daily newspapers under local medical society sponsorship.

These efforts were all concentrated on carrying through to the general public an understanding of the outstanding fundamental achievements of American medicine, such as "The Highest Level of Health Ever Known," and the basic causes of the unusual achievements.

Evidences of the effectiveness of joint efforts toward a common objective are being provided.

In a public address constituting a declaration on Health and Medical Policy at Bethesda, Maryland, on October 31, 1940, Mr. Roosevelt said, in part:

"In American life the family doctor, the general practitioner, performs a service which we rely upon and trust. No one has a greater appreciation than I of the skill and self-sacrifice of the medical profession. And there can be no substitute for the *personal relationship between doctor and patient* which is a characteristic and a source of strength of medical practice in our land."

On July 18, 1941, Mr. Arthur J. Altmeyer, chairman of the Social Security Board, before the House Committee investigating national defense migration, in part, said:

"Some sharp clashes have centered around the proposals for health insurance. There are those who say that such proposals lead inevitably to 'socialized medicine,' a vague phrase. 'Socialized medicine' is

something to which I am opposed if that phrase means a system which destroys the *personal relationship between the patient and his doctor.*"

In a press release of the American Youth Commission of the American Council on Education, Mr. Owen D. Young, chairman of the commission, is quoted—in connection with the administration of a proposed health insurance plan—as follows:

"Any system of health insurance should include free choice of physician by the patient (subject, of course, to the consent of the physician) and *the same individuality of relation between patient and physician that now exists*, with the single exception of the manner of paying the bills.

"The medical part of the administration should be conducted, as far as possible, by medical men, with only such oversight by them of the individual physician as universal experience has found necessary and acceptable."

Speaking before a United States Hospital Fund meeting in New York City on October 14, Mr. Paul McNutt, Federal Social Security Administrator, said:

"Your voluntary system to help finance charity, medical, and social services in hospitals is typically American in conception, in plan, and in operation.

"Operated and financed by private enterprise, it is an effective answer to those who insist that the vigor and strength of our way of life has been sapped to the point where we are unable to cope with the tremendous problems which have accompanied the march of industrial development."

Mr. McNutt stressed the necessity for maintaining private enterprise in the support of hospitals.

These statements of medical policy by the highest authorities provide a graphic and practical demonstration of the fact that medicine's fundamental concepts are beginning to be accepted as bases of operations. The President's rehabilitation program, through "local doctors," is a concrete example of their application.

### IS THE DANGER PAST?

On September 24, Mr. Charles A. Togut, speaking before the National Fraternal Congress of America, warned that "state or



governmental medicine will paralyze the country's fifty million voters and destroy the private practice of medicine." He said:

"National defense has catapulted the issue of the 'National Health' onto the front page of every newspaper and onto the burning wires of every radio transmitter. As in nations ruled by the sword, malicious propagandists are piercing the heart of our incomparable system of medical care.

"The Congress of the United States is weighing the destiny of our peoples and of our doctors with numerous authoritarian legislative medical measures. The battle of the century, the government versus the American Medical Association, is but a prelude to the conditioning processes of a national planned medical care program, unless the American peoples, the doctors, the industrialists, the leaders of labor and capital can smother the most powerful propaganda factory in the world and inaugurate fighting means and methods to unite the leaders of medicine and industry in a progressive health insurance movement."

Today there is greater cause for fear and a greater need for constant and intelligent vigilance than at any previous time if the independence of medicine is to be preserved.

#### CAUSES

Actual needs of war participation are making necessary revolutionary changes in our social, industrial, and economic structures. Quoting from the October issue of the *Reader's Digest*:

"The new bomber program alone calls for creation within months of an entire industry greater than the whole automobile industry. Put on top of that a tank industry which will be as large as General Motors. Add to that a shipbuilding undertaking that calls for a plant capacity greater than that of the whole world in normal times."

It is reliably estimated that, during the short period of war effort, more than 3,400 new manufacturing plants have been built or are in the process of building at a total cost in excess of thirty-nine hundred million dollars (\$3,900,000,000). Of this new productive equipment, the United States government has financed or is financing the construction of 429 gigantic plants at an over-all cost in excess of twenty-five hun-

dred million dollars (\$2,500,000,000). It is estimated that, during the next twelve months, these investments for new plant expansion will total more than seven thousand million dollars.

Tens of thousands of small business enterprises will be liquidated. An actual need has been created for a centralizing of production and the establishment of government controls and operations never before contemplated or even imagined in the United States.

The first obligation—the first responsibility—of the medical profession and each individual physician is to make a commensurate contribution to the defense effort. And it must be kept constantly in mind that, under any circumstances, ultimately medicine must serve under and mesh with the new conditions which will finally emerge from these revolutionary changes.

#### THE GREATEST DANGER

Today, in the United States, there are more people gainfully employed, at higher rates of pay, than at any previous time. These generally larger earnings are beginning to influence more prompt payment for medical care. Shortsighted doctors, freed from a part of the sense of financial insecurity, are prone to forget or to ignore the more important issues involved.

It is true that this lessening of unemployment has removed one of the basic cause factors which led to the determined drive for the state control of medical service. However, the new advocates of "state control" and new factors demanding greater centralization of governmental authority have actually increased the danger. It is possible that the solution of the medical independence problem will necessitate approaching it from a broader base.

#### THE NEW RESPONSIBILITY

Now there is the opportunity and the responsibility for medicine to take the lead in acknowledging the present need, cheerfully assuming its share of the immediate task—on the basis of the emergency—but, at the same time, building the safeguards which will insure ultimately a continuation of the American way of life and, inciden-

tally, the independence of the medical profession.

### THE PROVEN METHOD

There is but one way. Its potency has been demonstrated by American physicians—*Educational Propaganda*.

The methods and the preliminary educational efforts of the physicians have been unusually—in some respects spectacularly—effective. The methods and the media can be indicated. It is as impossible to explain the “why” of the effectiveness as it is to explain the spiritual factors which enter into the curing of disease. The elements are as subtle as those of the “doctor and patient relationship.”

There can be no question but that, if 150,000 physicians fully understood the National Physicians Committee's purpose and fully comprehended the nature and subtlety of its operation, each and every one would desire to participate in its efforts.

For this reason, we illustrate on the immediately following pages one of the methods that has been successfully employed.

For almost a year—every week for more than forty weeks—there has gone forward from the office of National Physicians Committee an editorial to more than 12,000 newspapers with an estimated forty million readers weekly. They are short, concise, and timely. Each and every editorial has a short concluding paragraph exclusively devoted to an explanation and praise of our system of independent medical practice.

Immediately following is reproduced one of the editorials, shorter than most, but typical:

#### YOU ARE LUCKY TODAY

March 17, 1941. “The last century was a period of unbelievable progress. But in no field was greater progress made than in care of the sick, and in advancing the standards of public health.

“A century ago, for instance, anesthesia for surgical operation was unknown; it did not come into use until 1846. And even later, in Civil War days, hospital death rates of twenty per cent and more were not uncommon. Nothing was known of infectious diseases, the germ theory had not been heard of, and sterilization of instruments

and dressings was never practiced. Not until 1868 was a start made in curbing and controlling infection.

“Startling is the fact that ninety-nine out of 100 American hospitals were founded within living memory. Fifty years ago hospitals were generally confined to large cities; in small towns and rural areas operations took place at home by the light of kerosene lamps and an open vessel steaming on a stove as sterilizer. The medical men were not content. It was due to their initiative that hospitals in smaller centers were gradually established.

“The whole history of medicine is a history of individual effort—of tireless private initiative—of unselfish men fighting the endless war against disease and public ignorance. And all of us lead happier, fuller lives because of it.”

Immediately following are the titles of editorials that have been released and the concluding paragraphs under the titles, respectively:

#### FERRETING OUT THE FLU

March 10, 1941 (final paragraph). “Here is the way private medicine works. Its war against disease never ends. One by one, the plagues which have killed so many millions are shorn of their menace.”

#### TEST TUBES DWARF SKYSCRAPERS

March 31, 1941 (final paragraph). “What is true of tuberculosis is true of all the great killers. Some have been controlled. Some are yet little understood. But always the medical profession fights on. American medicine is making your life healthier, happier, fuller.”

#### TRUE INTERNATIONALISTS

April 28, 1941 (final paragraph). “Here is a story that has been duplicated in a hundred cases—one by one, the great killers are being conquered. This is the priceless gift of medical men to the peoples of all the world, and American doctors are now heading the list of human benefactors.”

#### MEDICAL SCIENCE FINDS NEW WORLDS

May 5, 1941 (final paragraph). “So science takes another step forward—a step fraught with possibilities for improved



health and greater freedom from disease. Here in America private medicine is leading the world in the fight against the greatest of killers—bacteria.”

# THE AMERICAN DOCTOR

May 19, 1941 (final paragraph). “Medical science has reached its greatest development in this country. Here we have had private medicine, as contrasted with the bureaucratic, socialized medicine that exists in most European countries. Every doctor is encouraged to do his utmost. He knows that there is no limit to achievement save that set up by his own abilities and energies. That is why American standards of health are the highest in the world.”

# MONUMENT TO AMERICAN MEDICINE

June 2, 1941 (final paragraph). “In those 150 years typhoid fever has almost disappeared; smallpox has been subdued; diphtheria has been practically conquered; tuberculosis has been robbed of much of its terror. The monument to American medicine is written in the standards of health of the American people—standards which are not equaled anywhere else on earth.”

# TWOFOLD GOAL OF MEDICINE

June 9, 1941 (final paragraph). “American doctors oppose political tinkering in the field of medicine which would in all probability make for retrogression, not progress, in medical science. The goal of American medicine is twofold—first, to prevent disease; second, to cure disease.”

# IN FIFTY YEARS

June 16, 1941 (final paragraph). “In this country, the level of public health is the highest ever attained in the civilized world. But even that great achievement does not satisfy the medical men. They mean to achieve far more in the years to come. That is the way the medical mind works. It never stands still. It must always look forward.”

# THE DOCTOR AS A SOLDIER

June 23, 1941 (final paragraph). “The doctor is a soldier—a soldier fighting an everlasting war against disease and plague and death. Today medicine is mobilized to make that fight even more effective.”

# CANNOT SWALLOW OWN MEDICINE

June 30, 1941 (final paragraph). “Everywhere socialized medicine has been established, public health standards are lower than in this country. That is fact—not theory. When the medical profession fights regimentation, it fights for all the people.”

# IN CASE OF BURNS

August 4, 1941 (final paragraph). “In very recent years the medical profession has made remarkable progress in the treatment of burns. Many severe cases which would have proved fatal not so long ago are now saved and disfiguring scars are largely prevented. This is just one of the many chapters in the book of achievement of private medicine in this country.”

# SAVING OUR CHILDREN

August 11, 1941 (final paragraph). “Private medicine has made strides that can be best described as miraculous in controlling and eliminating the great bacterial killers. The result is twofold—longer lives for the people and happier, fuller lives as well.”

# WHITE BREAD PLUS VITAMINS

August 18, 1941 (final paragraph). “The medical fraternity has again done a big job for the health of all the people, and particularly to the white-bread consumers of America—a classification which includes the bulk of the population.”

# HE WHO PAYS THE PIPER

September 2, 1941 (final paragraph). “We Americans have more doctors and better doctors than any other nation. We Americans, rich or poor, receive in sickness far finer care than any other human beings. That is the way the system of private medicine proves its soundness—by results.”

# THOSE VITAL VITAMINS

September 8, 1941 (final paragraph). “Good health is good defense against an enemy, the same as good tanks and guns. The American medical profession knows this and is doing all it can to speed plans for a better diet and better health which means a stronger nation.”

It is obvious that these editorials must be published to become factors in spreading medical information. Thousands of news-

papers—newspapers in every state—have published and are publishing this important material. (To any physician will be sent on request the newspapers in any state which are using the National Physicians Committee editorials.)

#### FINANCES

The policy of the National Physicians Committee has been to carry forward effectively segments or parts of a broad program. The extent of its activities has been determined by funds available for operation.

To carry forward all phases of a carefully-conceived and well-defined plan of nationwide effort will require substantial funds yearly, and for a minimum period of three years.

It is now fully understood that the carrying on of this vitally important work is the direct responsibility of the medical profession.

During the past two years individual physicians contributed to the National Physicians Committee efforts to the extent of approximately \$100,000. Individual local medical societies have made systematic canvasses of the membership of their societies, respectively, and have provided financial support in amounts ranging from \$500 to, in one instance, more than \$3,000. Forty-two and two-tenths per cent of National Physicians Committee funds have come from sources other than physicians.

It has been demonstrated that:

a. The hit-or-miss method is too slow—is wasteful—and may jeopardize final results through inadequate funds.

b. This method places the responsibility solely on the shoulders of an enthusiastic minority.

c. Systematized action by an official committee of the local medical society will (1) produce adequate funds, (2) spread the load uniformly, (3) provide not only financial support, but the interest and cooperation of the rank and file of physicians.

On October 17, 1941, a check in the amount of \$2,635.47 was received from the National Physicians Committee of the Hennepin County (Minneapolis) Medical Society. Accompanying the letter of transmittal was a list of 224 physicians who had participated in the effort.

Throughout the United States large local medical groups, including Los Angeles and Alameda County (Oakland), California; New Orleans, Louisiana; Houston and Dallas, Texas; Dayton, Ohio; Memphis, Tennessee; Lycoming, Pennsylvania; St. Paul and Rochester, Minnesota, have established special operating committees to systematize and unify support for carrying forward, during the coming period of stress, the vitally important educational work of National Physicians Committee.

These cooperating groups are looking forward to similar efforts by every local society in every state. Your understanding, your interest, and your support are needed and solicited.

# PNEUMONIA CONTROL PROGRAM (A SYMPOSIUM)

## CLASSIFICATION OF THE PNEUMONIAS\*

TOM MITCHELL, M.D., Memphis

In introducing this symposium, it may be well to say something of the Tennessee State Medical Associations' Pneumonia Control Program, since its origin, organization, operation, and aims may not be familiar to some of those present.

The pneumonia mortality for Tennessee is so high that, in lists which are arranged with regard to pneumonia mortality incidence in the several states, Tennessee is well up near the top of the list. While it is probably true that some of these deaths should be attributed to other causes, the death certificate not indicating a pneumonia terminal to some other condition either not recognized or not reported, this number is not believed to be great enough to materially reduce the total.

Confronted by these figures, the Tennessee Public Health Council in regular meeting in June, 1940, recommended that a Pneumonia Control Program be instituted in the state and suggested that the officers of the Tennessee State Medical Association be contacted in regard to a joint sponsorship on the program with the Tennessee Department of Health.

Dr. John M. Lee, chairman of the council, arranged to have the matter brought before a meeting of the board of trustees of the state association, and at this meeting the board of trustees decided to sponsor such a program and to act as the Pneumonia Control Committee for the state association. An executive subcommittee, composed of Dr. C. M. Hamilton, chairman; Dr. John M. Lee, and Dr. H. H. Shoulders, was appointed to act for the trustees.

Plans were made to bring a discussion of the pneumonia problem before each county society in the state. A group designated as instructor consultants to the Pneumonia Control Program Committee was selected to hold these meetings. The following men were selected and have served to this time as instructor consultants:

Dr. E. T. Brading, Johnson City,  
Dr. R. B. Wood, Knoxville,  
Dr. E. R. Zemp, Knoxville,  
Dr. J. O. Manier, Nashville,  
Dr. E. L. Turner, Nashville,  
Dr. W. R. Cate, Nashville,  
Dr. O. N. Bryan, Nashville,  
Dr. T. J. Manson, Chattanooga,  
Dr. C. H. Sanford, Memphis,  
Dr. Alfred M. Goltman, Memphis,  
Dr. L. C. Sanders, Memphis,  
Dr. F. T. Mitchell, Memphis.

In October, 1940, Dr. Roderick Heffron of the Commonwealth Fund met with the executive subcommittee and discussed the programs being carried on by some of the New England States pneumonia control committees. Later Dr. Harrison F. Flippin of Philadelphia, a member of the Pneumonia Control Committee of the Pennsylvania State Medical Association, met with the instructor consultants, the subcommittee of the board of trustees, and Dr. W. C. Williams and other representatives of the state board of health. At this meeting certain parts of the program for this state were decided upon.

At later meetings with parts of these various committees and representatives of the state board of health, the final details of the organization were worked out. Cards for drug requests and report of cases were adopted—a booklet, "Pneumonia, Its Etiology, Diagnosis, and Treatment," was prepared and printed.

Certain members of the Committee on Pneumonia Control had been appointed to arrange for the meetings with the various county societies in groups throughout the state. During November and December, 1940, and January and February, 1941, all the county societies were met with the exception of four, with whom so far it has been impossible to arrange a meeting. Later it was decided to hold meetings with the colored medical societies in the state, and to date three of these have been held. About

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.



800 physicians in all have attended these meetings to date.

At each meeting the Commonwealth book on pneumonia, the state committee's booklet, and fifty tablets of sulfathiazole were distributed to each physician attending, as well as information relative to the use of the board of health's facilities for diagnosis and treatment.

The reception of the program has been enthusiastic. The meetings have developed much beneficial discussion. Drugs have been supplied for over 600 cases of pneumonia, and records of these cases are in hand to be tabulated as to results of therapy, toxicity of drug employed, etc., and a foundation has been laid for the continuation of this effort on a greater scale in the years to come when more physicians are familiar with the program. Centers for the distribution of sulfapyridine and sulfathiazole have been appointed by the board of health, and some discussion has been held as to the advisability of the board of health later establishing other laboratories for the diagnosis of types of pneumonia and the determination of concentration of drugs in the blood, etc., over the state.

#### ADULT PNEUMONIA

The older differentiation of the pneumonias into groups divided as to pathology into lobar, broncho, etc., was not always possible clinically and, at times, was difficult even at the autopsy. Bacteriologic studies have demonstrated that the same organisms are causative for both varieties. Since the advent of specific sera and chemotherapeutic agents, a classification based on the type of infection present is more desirable, since it is more useful from a therapeutic standpoint.

Typical lobar pneumonia, which may often be accurately diagnosed from the history, physical findings, and X-ray studies, is shown in ninety-two per cent of the cases to be caused by the pneumococcus. Cultures of sputum and blood in all cases of pneumonia reveal that ninety-five per cent are caused by the pneumococcus, the staphylococcus, or streptococcus. It is this large group which attracts our attention, since these are the ones which generally respond to serotherapy, chemotherapy, or both.

As will be pointed out later in this discussion, certain types of infection respond best to one or the other of the chemotherapeutic agents, and indications for combined therapy will be outlined.

In adults, lobar pneumonia had a mortality rate of about twenty-five per cent before the introduction of these measures. Figures now available indicate that with their use the death rate will be less than half that proportion.

Under virus pneumonias (Class B) are included those complicating the virus infections—influenza, measles, psittacosis, etc.; and under bacillary, those associated with tuberculosis, tularemia, etc. Since these organisms produce infections which do not respond to specific therapy, it is only when mixed infection with the pneumococcus, staphylococcus, or streptococcus is proven or suspected that they may be rationally employed.

In the group designated as secondary to senility, shock, mechanical causes, terminal pneumonia, etc., the same applies. Frequently these are mixed infections. Under Class C are listed those special forms of pneumonia, radiation, chemical, and allergic, for which other special therapeutic measures are indicated.

#### CHILDREN'S PNEUMONIA

In children likewise, if a classification of the pneumonias is arranged according to causative organism, most of them will be seen to be infections which will respond to some sort of sulfonamide therapy.

The greater number of pneumonias in children are due to the pneumococcus, and, while it is known that the strains seen most frequently in adult pneumonias are not the ones most usually encountered in children's infections, they are on the whole just as amenable to this therapy.

The most frequent types of pneumonia caused by the pneumococcus, in children, are a localized form and a disseminated form. The localized form, which resembles lobar pneumonia in adults and has a stage of congestion, red hepatization, grey hepatization, and resolution, is often seen in younger children as a confluent form of lobular pneumonia, and the consolidated

areas which may involve parts of more than one lobe have areas of normal lung interspersed between them. In older children typical adult-type lobar pneumonia is seen more frequently.

The disseminated form shows multiple lesions, in different stages of pathology, scattered throughout both lungs. Larger areas formed by the confluent arrangement of these lesions in the lower lobes posteriorly are often observed. These cases run a variable and irregular course. Some are very acutely ill and may die in one or two days from a severe intoxication at the onset, others may recover after many days' illness.

In children under three years of age, a form of localized pneumonia with fibrinous pleurisy out of proportion to the pneumonia is seen and is designated as pleuropneumonia. More often on the left side, at times with small pockets of pus, the whole of the visceral and the parietal pleura may be covered with a greenish-yellow exudate. With this pathology are marked constitutional symptoms. The early findings are, perhaps, a friction rub, later flatness without displacement of the heart, and at no time the finding of any great area of pneumonia. The mortality is relatively high, and these cases respond less satisfactorily to specific therapy than the other pneumococcus pneumonias.

The terminal pneumonias are usually mild and at times may be recognized only at the autopsy. In young malnourished babies, there occurs a protracted form of pneumonia associated with chronic gastrointestinal disease, this latter usually causing the death.

Capillary bronchitis is a form of lung infection caused by the pneumococcus. There is a fibrinous exudate into the bronchioles and edema of the bronchioles. It occurs in children under four years of age, has a sudden onset with high fever, rapid respiration, sibilant, later subcrepitant, rales over whole chest. There is no evidence of consolidation but rather an emphysema. Toward the end in those terminating fatally, there is congestion of the lung with edema. Improvement or death usually occurs in four or

five days. True pneumonia will complicate a few of these.

In the newborn, the pneumonias are more apt to be congestive affairs rather than typical infections; some may be associated with atelectasis. In these groups, little could be expected from chemotherapy. However, this past year several pneumonias in the newborn, some in premature babies, were seen which responded typically to sulfathiazole.

Streptococcus pneumonia and staphylococcus pneumonia, while occasionally primary, usually are secondary to one of the contagious diseases, scarlet, measles, influenza, pertussis, etc. Accumulation of marked amounts of clear fluid in the pleural space is frequent in the streptococcus variety, and in the staphylococcus the tendency is to abscess formation in the lung. In these varieties, the sulfonamides are not as efficacious as in the pneumococcus pneumonias.

Interstitial bronchopneumonia is a disseminated type with infiltration of the bronchial walls with mononuclear cells. It is associated with the infectious diseases, has an insidious onset and a protracted course in young children. The virus of the original infection seems to prepare the bronchial and peribronchial tissues for invasion of whatever pyogenic infection happens to be present. It is particularly severe in institutions. It may follow a bronchitis. The cough may be severe, the temperature fluctuates. The evidences of consolidation may appear late. Recovery rarely takes place in less than two weeks. Death is the rule in those which have not improved by the fourth week. In those who survive, a bronchiectasis sometimes supervenes.

Sulfathiazole and sulfapyridine are giving good results in this type of pneumonia excepting those due to the influenza bacillus.

I should like to express my appreciation to Dr. W. C. Williams of the Public Health Service, and Dr. R. B. Wood, Dr. Tim J. Manson, Dr. O. N. Bryan, and Dr. E. T. Brading for their cooperation in the preparation of the report of the work accomplished to date.



The classification of adult pneumonias is taken from Dr. Flippin's outline and the classification of children's pneumonia is

taken from material in Holt's "Diseases of Infancy and Childhood," D. Appleton-Century Company, 1940.

## THE SPECIFIC TREATMENT OF PNEUMONIA\*

O. N. BRYAN, M.D., F.A.C.P., Nashville

As I understand it, the specific treatment of pneumonia would include the use of anti-pneumococcic serum, but, in view of the complexities and difficulties of the serum therapy, especially outside of thoroughly-equipped hospitals, I shall limit my discussion to the simpler, much-less-costly, and more-effective chemotherapy.

A combination of serum therapy and chemotherapy will have to be seriously considered in the following cases:

1. Those in which the treatment is begun after the third day of the disease.
2. Those in persons over fifty years of age.
3. Those with demonstrated bacteremia.
4. Those with extensive involvement of more than one lobe.
5. Those in women who are pregnant or who are in the first week of the puerperium.

A good practical rule for the administration of serum would be to give an initial dose of 100,000 units for any one of the types of pneumonia. The dosage should be greatly increased (1) if the treatment is begun after the third day of the disease, (2) if the patient is over forty years of age, (3) if the patient is pregnant or in the first week of the puerperium, (4) if there is more than one lobe involved, (5) if pneumococcic bacteremia is known to be present.

Chemotherapy is a practical treatment and to a large degree is successfully carried out under the usual conditions of home care. If we are on the alert as to the diagnosis of pneumonia and begin chemotherapy at once, then there will be fewer complications and less need for serum. While the ideal way of carrying out the treatment and all the necessary laboratory procedures would be to have this patient in a hospital, there are many instances where for financial reasons, as well as many other reasons, this

cannot be done. With chemotherapy we have a means of treatment that is satisfactory even in the home. Of the sulfonamide group, sulfapyridine and sulfathiazole are the most effective and satisfactory in the treatment of pneumonia. More recently a newer drug called sulfadiazine is being used with very promising results.

Sulfapyridine has been in use long enough that it needs no comment, except to say that, while it gives excellent results in the treatment of pneumonia, there are certain objectionable features which we are anxious to get away from. The greatest objectionable feature was the nausea and vomiting which it caused in about eighty per cent of the cases. Sulfathiazole is the drug of choice, because there is less nausea and vomiting, and it is equally as potent as sulfapyridine. However, it is a little slower in its beneficial action.

Sulfapyridine will give you a prompt response in twenty-four hours while sulfathiazole will take from thirty-six to forty-eight hours to give you a similar response.

Just as soon as the clinical diagnosis is made, the sputum examination for typing and blood examination — which means hemoglobin, white count, red count, and blood culture—should be made. When possible, an X-ray plate should be made of the chest. Too much time should not be wasted in carrying out the above, but so soon as the blood is taken, then begin sulfathiazole. Inquiry should be made if there is any idiosyncrasy to this group of drugs. If they have had unfavorable experience with this group of drugs in the nature of agranulocytosis, severe anemia, or pronounced drug rash, then serum therapy must be considered. Caution should be used in a case with markedly impaired kidney function.

The initial dose of sulfathiazole is three grams, which is repeated in four hours, and then give one gram every four hours. Keep

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this up until the temperature has remained normal for forty-eight hours, then give one gram every six hours for forty-eight hours more. This scheme is to be followed unless some severe toxic reaction takes place. The total dosage of either drug, sulfapyridine or sulfathiazole, is twenty-five to thirty-five grams. The repetition of the three grams with sulfathiazole in the beginning of treatment is to compensate for the more rapid secretion of this drug. In certain cases where a rapid saturation is desired, a five per cent solution of sulfapyridine sodium or sulfathiazole sodium in sterile distilled water is given intravenously as a supplement to oral therapy.

There are many alterations of this plan of treatment, but for all practical purposes of treating pneumonia this is the plan followed. It is a very general practice to give either sodium citrate or sodium bicarbonate in equal amount to the sulfathiazole. It is best to see that 2,500 cubic centimeters of fluids are taken each twenty-four hours. Do not push fluids too much, because it will alter the proper concentration of sulfathiazole in the blood. If favorable results are not apparent within from thirty-six to forty-eight hours, then due consideration should be given to other forms of treatment and especially the use of serum.

There is no significant difference in the mortality rate of pneumococcic pneumonias when sulfapyridine or sulfathiazole is used. Some of the conditions that increase the mortality rate materially are decompensating heart, uremia, diabetes, active pulmonary tuberculosis, cancer, leukemia, and pregnancy.

Types one and three are the types showing the highest mortality in both the bacteremic and nonbacteremic cases. There is some variation in the mortality rate of different writers, ranging from five to ten per cent, where either sulfapyridine or sulfathiazole is used.

Blood concentration from sulfathiazole appears rapidly in the blood stream following oral administration. The average of six milligrams or more is very quickly obtained. The blood levels from sulfathiazole are relatively high as compared with sul-

fapyridine, but greater variations of the concentration will occur with sulfathiazole. The blood is frequently clear of the drug twenty-four hours after cessation, and it will disappear from the urine in twenty-four to thirty-six hours.

Flippen, Reinhold, and Schwartz give the incidence of toxic reactions in 400 cases as follows:

	<i>Sulfapyridine</i> Per Cent	<i>Sulfathiazole</i> Per Cent
Nausea -----	84	26
Vomiting (mild, moderate, severe) total -----	60	22
Hematuria -----	11	10
Dermatitis -----	11	10
Conjunctivitis -----	1.5	2.5
Drug fever ? -----	0	0.5
Psychosis ? -----	4.5	2.5
Leukopenia (below 5,000 W. B. C.) -----	8.0	3.0
Pain in loin -----	1.0	0
Renal calculi -----	0	0.5

Volini, Levitt, and O'Neil report the use of sulfathiazole in 169 cases with a mortality rate of 5.3 per cent. They state that only seven of this group experienced nausea and vomiting. There was no evidence of renal irritation and no marked effect on the hemopoietic system. Hemolytic anemia and liver damage were not met in this series. They report five cases as having a drug rash and two cases of intense conjunctivitis.

I dislike very much to discuss the toxic reaction that may occur from the use of both sulfapyridine and sulfathiazole, for fear that too much discussion of these toxic reactions may cause some physician to hesitate in using these valuable drugs, when and as early as possible. There have been practically no fatalities reported from the use of these drugs, and, furthermore, by stopping the drug and forcing fluids for a day or so, all the toxic symptoms will disappear. By using these drugs we have reduced the mortality of pneumonia from twenty-five or thirty per cent to five or six per cent; therefore, we should not hesitate to use the drug because of toxic reactions. By close analysis it will be found that where the severe toxic reactions have happened the drug had been used much longer than the ordinary case of pneumonia will require.

In fact, the average case of pneumonia will only require the administration of this drug for four or five days. When possible, it is wise to have the blood concentration run every day or so and also blood examinations (hemoglobin, white count, and red count) and urinalysis. The output of urine should be watched closely, and, in case it falls below 1,000 cubic centimeters in twenty-four hours, blood concentration should be made. If found too high, then the dosage of the drug must be reduced or stopped. We must cautiously use the drug in cases that have a marked impairment of the kidney function.

The satisfactory clinical response to these drugs in pneumococcus pneumonias is best shown by the temperature, pulse, and respiration curves. At the same time, there is a sense of well-being in the patient, and the white cell count returns to normal. These patients feel so well after the second or third day that we have difficulty in keeping them in for the required time.

Empyema is probably the commonest complication met in this form of therapy,

while other complications such as otitis media, mastoiditis, endocarditis, pericarditis, and meningitis are very rare.

Long gives a timely warning as follows:

"The evaluation of these new chemotherapeutic compounds will necessitate extensive experimental and clinical investigations in order to determine their efficiency in the control of infections and their clinical toxic manifestations. Until the time when such data are in hand, it is hoped that enthusiasm does not outrun common sense."

It has been shown that practically all the severe toxic reactions and complications come as a result of a high concentration in the blood or in those with an impaired kidney function, which suggests that in all probability the dosage is too much for the average case and will most likely be found that a much smaller dosage will give the same good results. At present we must follow the methods adopted by men in the large clinics and watch for their results as to the reduction of dosage. In this drug we have a safe and powerful weapon against the pneumococcus.

## THE NONSPECIFIC TREATMENT OF PNEUMONIA\*

E. R. ZEMP, B.S., M.D., F.A.C.P., Knoxville

"Pneumonia is a self-limited disease that runs its course uninfluenced by medicine. It can neither be aborted nor cut short by any known means at our command. Even under the most unfavorable circumstances it will terminate abruptly and naturally without a dose of medicine having been administered. We have then no specific treatment for pneumonia. The practitioner may bear in mind that the patient is more often damaged than helped by the promiscuous drugging which is still only too prevalent." Thus wrote in 1906 one of the greatest practitioners that the world has ever known, Dr. William Osler.

Little did he dream that in so short a time, comparatively speaking, a remedy would be discovered that is almost, if not, a true specific for pneumonia, which during

his time stood near the top of our vital statistics as a cause of death.

God moves in a mysterious way his wonders to perform, so out of Nazi Germany there comes this gift which is the greatest contribution that has been made to medicine in the past hundred years. It seems to me that medicine in its broadest sense demonstrates that there can be a true brotherhood of man and that the victories of peace and science are overwhelmingly greater than those of war. Thus comes to us the sulfonamide group of drugs, originated by the Germans, carried on by the French and English, and finally perfected in its application to disease by our own physicians and scientists.

The literature on the use of the various sulfa compounds started as a small shower, but today it has become a deluge. We scarcely become acquainted with one of these compounds before another is presented

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to us. Each one an improvement over the one coming before. Sulfanilamide was a good drug, but sulfathiazole is a much better one. There are probably many more even better than these to be discovered. Any one of this group is considered to be almost a specific for all types of pneumonia, provided the treatment is started early and the patient shows no idiosyncrasies. The treatment has become very simple, in fact, so simple that the patient is almost forgotten. This I think is unfortunate, for if one depends entirely upon the administration of the sulfanilamide group and disregards other measures that have proved to be of great value, he will very often meet with failure; which, however, should not be attributed to the drug.

This being true, we should not forget, or lay aside, those cardinal principles of treatment that have been formulated by the great physicians of the past. Every effort should be made to aid the patient in the development of the antibodies so necessary to his recovery, and without which he is lost. One might surmise from modern literature that rest, oxygen, intravenous dextrose, and the relief of pain play but minor roles, but they are still highly-important factors. The rational use of these aids the patient in developing his antibodies and prevents the diversion of his physiological energies.

*Rest.*—Rest is purely a relative term, but it applies to the sum total of all the body's activities. To attain the greatest amount of physiological and anatomical rest, not only should the patient be put to bed, but his bed and his position in the bed should be comfortable. The energy expended in maintaining an uncomfortable position, or seeking to find a comfortable one, is considerable. Mental rest is equally as important as physical rest, for mental unrest means muscular unrest. In the restlessness of pain, insomnia, or delirium an enormous amount of energy is expended. Pain is a physiological spendthrift. It will soon bankrupt any patient. It is evident that rest means a great deal more than going to bed.

*Diet.*—All the activities of the body are but the expression of the conversion of the potential energy of the food into the various

forms of energy. The source of all bodily energy is food, and without food there can be no energy. It requires approximately thirty calories per kilogram of body weight while the body is at rest for the normal individual. The sick man needs more. Fever increases the output of energy twenty-five per cent, and toxemia makes even greater demands, so that a patient suffering from a serious, acute infection needs from sixty to seventy calories per kilogram body weight. This should be supplied chiefly as carbohydrate. The amount of protein needed to maintain a nitrogen balance is about the same as in health. The difficulty lies in getting patients to eat. All the devices of artful nursing must be brought into play, and the danger lies not in overfeeding but in underfeeding. The efficiency of digestion and assimilation are impaired but slightly if at all. There is no evidence that sulphur-containing foods or drugs have any deleterious effect when the sulfa compounds are being given.

*Oxygen.*—The withholding of oxygen until the patient becomes cyanotic is a grievous mistake. It should be used early and more or less continuously. The dyspnea that appears is due to the effort of obtaining more oxygen from the air, and the rapidity of the heartbeat is only an expression of the desire for a more rapid flow of blood through the lungs. Oxygen will save the patient the expending of valuable energy and give him an abundant supply of this vitalizing agent. Oxygen is the best agent we have for the relief, or prevention, of intestinal distention. Oxygen refreshes the blood, lessens the pulse and respiratory rate, and makes the raising of sputum easier, it becoming less thick and tenacious. (Lovelace.) Before the advent of chemotherapy, G. H. Fagget and Walter B. Martin in the *Annals of Internal Medicine* of July, 1938, show a reduction in their mortality of nearly fifty per cent by the routine use of oxygen. I much prefer the B. L. B. mask to the oxygen tent. By using the mask, the percentage of oxygen administered can be more definitely regulated and the usual nursing care can be carried out more successfully.

*Intravenous Use of Dextrose.*—There is no one remedy that is used so lavishly and perhaps so erroneously as dextrose. There are three common indications for the use of dextrose intravenously: (1) to furnish fluids and energy, (2) to protect the liver, (3) and to dehydrate. The first two indications are the ones generally sought in the treatment of pneumonia, but as given the result desired is not obtained. There is a dose of dextrose just as there is a dose of any other drug, and, when we exceed this dose, we are apt to do more harm than good. The optimum dosage and the rate of injection of dextrose in solution can no longer be regarded as a matter of opinion. The human body is incapable of utilizing dextrose faster than from .75 to .80 grams per kilogram of body weight per hour. This is the rate at which it should be given. Glycosuria should never be produced, and the total amount to be given at any seance is about seventy-five to 100 grams. Given in this way, it supplies available food and energy, overcomes acidosis and dehydration, and fortifies or increases the function of the liver. As ordinarily given, with the production of glycosuria, it is not a help but a burden to the body, draining it of badly-needed fluid and especially overtaxing the pancreas, liver, and the kidneys in its metabolism or elimination.

*Morphine.*—Need I even suggest that morphine for pain and restlessness is one of our sovereign remedies and should be used freely. However, it is best to combine with each does one ampule of prostigmine (1-4,000). This also aids in the prevention of intestinal distention.

The addition of the sulfa compounds to our armamentarium has greatly modified and simplified the treatment of pneumonia. They have also markedly reduced the mortality rate. While sulfanilamide and sulfapyridine are both effective, sulfathiazole is probably the best of the three. It is more bacteriostatic, more rapidly absorbed and eliminated, undergoes less conjugation, and is much less toxic.

When sulfathiazole is given early and in sufficient doses, complications are not likely to occur. In fact, the infection is stopped so promptly and dramatically that compli-

cations do not have time to develop, the ordinary case being arrested in from twenty-four to seventy-two hours. The cure of the patient is brought about through the inhibition of the growth of organisms and the cooperative activity of the normal defense mechanism of the body. However, complications do occur occasionally, and they should be treated according to their indications.

When administering the sulfa compounds, the possibilities of toxic reactions should always be kept in mind. Some of these are mild and harmless, others are severe and serious.

The milder toxic symptoms such as nausea, vomiting, giddiness, and weakness occur in the first twenty-four hours and give us little concern. If vomiting is severe, the drug should be stopped, but it may be resumed later. A mild acidosis has been observed, but there is little or no evidence that the administration of alkalies relieves this condition or prevents the formation of acetylated crystals in the kidneys or ureters.

A slow, progressive anemia is probably caused by the dual effect of toxemia and drug, not discounting the large amount of fluid some of these patients get by phlebotomy. There is also a drop in the white cell count during the first few days of treatment. White blood counts of 5,000 or less are occasionally seen. In one of my own cases, the white cell count dropped from 8,500 to 4,000 in three days after the drug was discontinued, and the granulocytes dropped to forty-five per cent. The patient went on to an uneventful recovery. The more serious toxic effects are acute hemolytic anemia, agranulocytosis, hyperpyrexia, skin rashes, jaundice, renal insufficiency, and hemoglobinuria.

*Acute Hemolytic Anemia* is a very serious manifestation and calls for the immediate withdrawal of the drug, the forcing of fluids, and transfusions. It occurs between the third and seventh day of treatment. Never before the third and never after the seventh. It is characterized by a rapid onset and may progress for three or four days after discontinuance of the drug. It is associated with high temperature, leukocytosis (30,000 to 50,000), hemo-



globinemia, and hemoglobinuria. Recovery generally follows proper treatment.

*Agranulocytosis.* — Sometimes it occurs from the use of the sulfa compounds but rarely in the treatment of pneumonia. It occurs more frequently between the fourteenth and twenty-first days. The average case of pneumonia gets only about three or four days of intense drug treatment. However, agranulocytosis may occur as early as the seventh day. So a progressive neutropenia should be carefully watched by daily blood counts. When it occurs, the mortality is about eighty per cent regardless of treatment.

*Fever.*—Fever may range from 101 to 106 degrees. It is hard to interpret. It may be due to an exacerbation of the disease or a toxic manifestation. In the case mentioned above, the temperature rose to 105.8 degrees, dropping by crisis after the drug was discontinued. A process of elimination will determine which factor is the cause. If due to the drug, it should be discontinued, at least temporarily.

*Skin Eruptions.*—Skin eruptions, if any, usually occur between the seventh and ninth days. Mild ones may be seen during the first few days of treatment. In one of my cases, an intense, widespread erythematous eruption occurred about twelve days after the drug was discontinued. The eruptions are pleomorphic in character and vary greatly in their distribution. The severe types are accompanied by hyperpyrexia, leukocytosis (70,000 to 80,000), edema, and jaundice. Stopping the drug and forcing fluids are all the treatment needed for recovery.

*Jaundice.*—Jaundice is generally associated with hemolytic anemia and exfoliative dermatitis. It is due to increased destruction of red cells and impaired liver function. The drug should be discontinued, fluids forced, and a high carbohydrate intake instituted.

*Urinary Tract.*—Toxic effects involving the urinary tract are important. Microscopic hematuria occurs in about ten per cent of the cases. Gross hematuria occurs in about one per cent. It is probably due to the presence of urinary crystals of the acetylated drug. In mild cases of hema-

turia, the drug may be continued cautiously, but, in ureteral blockage, it should be discontinued and fluids forced. Anuria sometimes occurs. In a case referred to me, the patient presented an enormous, firm tumor in the right side of the abdomen reaching from his liver to his pelvis. It was first thought to be an enlarged liver, but proved to be the distended pelvis of the right kidney. He had been treated several weeks before for pneumonia with sulfapyridine. The kidney was removed, and the patient made a prompt recovery. The amount of sulfapyridine taken was not determined. Urinary-tract blockage is not likely to occur if the output of urine is kept at about 1,200 cubic centimeters per day. This calls for an intake of 3,000 to 4,000 cubic centimeters of fluid daily. There is no evidence that the administration of alkalies are of prophylactic value.

It is well to remember the possible time of occurrence of the various toxic manifestations. During the first week of treatment, cyanosis, nausea, vomiting, and acute hemolytic anemia may appear. During the second week, fever, skin eruptions, and toxic hepatitis. During the third week, agranulocytosis and a slowly progressive anemia. Bearing this in mind, one can better be prepared for appearance of various reactions. (Keefer.)

*Routine Management.* — In beginning treatment with any of the sulfa compounds, routine laboratory examinations should be made. This includes typing, blood count, urine, sputum, and blood cultures. When possible, the diagnosis should be verified by X-ray. However, a clinical diagnosis is sufficient in cases where these measures cannot be carried out. The success of chemotherapy depends largely upon the time that treatment is begun. The earlier the treatment, the lower the mortality. The mortality rate increases in direct proportion to the time treatment is delayed. Usually a three-gram dose of sulfathiazole is given by mouth and repeated in four hours. Then one gram is administered every four hours day and night until the temperature remains normal for forty-eight hours and resolution begins. After this, the dose may be cut in

half and the interval increased from six to eight hours. The total dose for an ordinary case is twenty-five to thirty-five grams, depending (1) upon the day treatment is started, (2) the presence or absence of bacteremia, (3) the spread of infection, and (4) kidney function. No hard and fast rule can be made. In desperate or late cases, when a rapid elevation of the blood concentration level is desired, a five per cent solution of sulfathiazole sodium in sterile distilled water may be given intravenously. The dose is .06 grams per kilogram of body weight. Repeat in eight hours if necessary.

Sulfathiazole blood levels that produce good results differ markedly in different patients. Generally if a five milligrams per cent is maintained, satisfactory results are obtained. With this level, less toxic symptoms are observed than with higher ones.

## A PROGNOSTIC INDEX IN PNEUMONIA\*

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The prognosis in a patient with lobar pneumonia is determined by several factors, namely:

1. *The age of the patient.*
2. *The degree of involvement of the lungs.*
3. *The presence or absence and degree of bacteremia.*
4. *The presence or absence and severity of complications.*
5. *The presence and severity of accompanying conditions.*
6. *The type of treatment and its adequacy and the duration of the disease before treatment is instituted.*

These facts are well recognized by nearly all physicians. However, the prognosis in an individual case is not an easy matter; and, although it has been much improved by specific therapy, many patients still die. The mortality in cases treated with serum alone is certain to be around ten or twelve

Perrin H. Long, and Eleanor A. Bliss: "The Clinical and Experimental Use of Sulfanilamide, Sulfapyridine, and Allied Compounds." New York, The Macmillan Company, 1939.

Norman Plumer and James Liebman: *The New International Clinics*, Vol. III. 1940. Philadelphia, J. B. Lippincott Company.

Morris A. Schnitker: "Sulfanilamide, Sulfapyridine, and Allied Compounds in Infections." New York, Oxford Medicine, Vol. IV, Part III.

Chester S. Keefer: "Sulfanilamide: Its Mode of Action and Side Effects." *Medical Clinics of North America*, September, 1939, W. B. Saunders Company, Philadelphia.

Harrison F. Flippin, and John S. Lockwood: "Sulfathiazole and Sulfapyridine in the Treatment of Pneumococcal Pneumonia and Meningitis." *Medical Clinics of North America*, November, 1940, W. B. Saunders Company, Philadelphia.

Roderick Heffron: "Pneumonia." *The Commonwealth Fund*, Humphrey Milford, Oxford University Press, 1939.

per cent unless a selection is made of young patients treated early in the disease. Likewise, mortality figures compiled from cases treated with sulfapyridine or sulfathiazole will consistently show a death rate of around seven per cent.

We are primarily interested in determining if it is possible to lower this mortality figure still further. Why do these patients die? Do we have in our power the means to cut the mortality rate to three per cent or two per cent or even one per cent?

In trying to answer this question, we studied the records of 555 cases of lobar pneumonia from three large hospitals in the Philadelphia district. In order that proper statistical inference could be made, rigid criteria were established in the selection of cases to be classified so that there could be no doubt about the diagnosis of pneumococcic lobar pneumonia and our ability to establish a prognosis in similar cases similarly studied. Only those records were accepted which were complete in the fol-

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lowing details: the patients were all twelve years of age and older; the diagnosis of lobar pneumonia was definitely established in each case by history, physical examination, or X-ray study (in many by all three); blood cultures had been done; pneumococci were isolated from the sputum or blood in every case and where possible were typed; sufficient data had been recorded to permit careful appraisal of all the variables known to influence mortality.

Three hundred and twenty-five case records were found which satisfied these criteria. One hundred and sixty-two of these cases had received no specific treatment and served as controls. The mortality in this group was 34.6 per cent. Seventy-five cases had received serum therapy. The mortality in this group was sixteen per cent; eighty-eight cases had received sulfapyri-

dine, and the mortality of these was 10.1 per cent. (These mortality figures are higher than in some other reported groups chiefly because many mild cases never had blood cultures done, and, therefore, do not appear in our statistics.)

We then adopted a method for establishing a prognostic index similar to one proposed by Rabinowitch, Fowler, and Bensley<sup>1</sup> for the study of diabetic acidosis. In this method, arbitrary numerical values are assigned to each of the factors known to influence mortality rate. Relative severity of each variable is indicated by the size of the number assigned to it; and, when a number has been assigned for each of the six variables noted above, the total of these numbers will give a figure which allows comparison of mortality rates in groups of cases with similar totals.

TABLE I

	Index Values	0	1	2	3	4	5	6	7
	Age		12-19	20-29	30-39	40-49	50-59	60-69	70
VARIABLES	Degree of Involvement	—	Part of lobe	Whole lobe	Upper and lower or middle lobe	Both lower lobes	Whole side and lower on other side	—	—
	Blood culture	Neg.	—	—	Less than fifty colonies per cubic centimeter		50-250 colonies per cubic centimeter or positive culture colony count not done	—	More than 250 colonies per cubic centimeter
	Accompanying conditions	None	—	Obesity Tuberculosis Pregnancy Diabetes Anemia Comp. Ht. Dis. Tabes—etc.	Asthma Pneumoconiosis Delirium tremens	Ruptured appendix and other post-operative conditions Moderate azotemia	Heart failure Diabetic acidosis	—	Renal failure
	Complications	None	—	Pyelitis Arthritis Empyema Phlebitis Otitis media	Toxic jaundice Nephritis Leukopenia Toxic psychosis	Lung abscess or gangrene of the lung	—	—	Meningitis Endocarditis Pericarditis
	Serum		Adequate serum on first day	Adequate serum on second or third day	Serum on fourth day or inadequate amount first, second, third days	Adequate serum after fifth day or inadequate on fourth day	No specific treatment	—	—
TREATMENT	Sulfapyridine	—	Started on first or second day	Started on third or fourth day	Started on fifth, sixth, or seventh day	Started after seventh day	No specific treatment		

Table I shows how the arbitrary numerical values were assigned to the six important variables. These are based upon statistical evidence where such is available and upon clinical judgment when statistics are lacking. There is an arithmetical progres-

sion of the mortality rate with advancing age as shown in Table II. (Figures are from reports of mortality in untreated cases by Bullowa<sup>2</sup> and Cecil, Baldwin, and Larsen.<sup>3</sup>)

TABLE II  
EFFECT OF AGE UPON MORTALITY

AGE	BULLOWA'S MORTALITY Per Cent	CECIL'S MORTALITY Per Cent	AVERAGE Per Cent	ARITHMETICAL PROGRESSION	INDEX VALUE
12-19	9.5	11.1	10.4	9	1
20-29	14.8	15.5	15.1	18	2
30-39	27.5	24.2	26.0	27	3
40-49	36.8	34.8	35.8	36	4
50-59	51.5	42.7	46.3	45	5
60-69	57.6	52.7	54.5	54	6
70	61.4	—	61.4	63	7

This progression permits unit index values to be assigned for the first decade and an arithmetical increase for each succeeding decade. The values assigned for the *degree of involvement* are relative to mortality figures reported by Bullowa.<sup>2</sup> The values used for recording effect of positive *blood cultures* are based upon statistics of Heffron<sup>4</sup> and Bullowa<sup>2</sup>. (Table III.) When colony counts were not made, an arbitrary value of five was assigned. For *accompanying conditions and complications* the numerical values necessarily

TABLE III  
EFFECT OF BACTEREMIA UPON MORTALITY

PER CENT MORTALITY IN UNTREATED CASES		
	HEFFRON <sup>3</sup>	BULLOWA <sup>1</sup>
Negative blood culture	11.1	14.8
Positive blood culture	—	76.7
1-50 colonies per cubic centimeter	45	—
50-250 colonies per cubic centimeter	80.5	—
Over 250 colonies per cubic centimeter	100	—

TABLE IV

	AGE	DEGREE	BLOOD CULTURE	ACCOMPANYING CONDITIONS	COMPLICATIONS	TREATMENT	TOTAL INDEX VALUE	RECOVERED	DIED
Patient	55	1 lobe (L.L.L.)	Positive 1 colony cubic centimeter	Diabetes (mild)	None	Sulfapyridine on fifth day			
Index Value	5	2	3	2	0	3	15	x	
Patient	26	1 lobe (L.L.L.)	Negative	None	None	280,000 units of serum first day			
Index Value	2	2	0	0	0	1	5	x	
Patient	42	Both lower lobes	Positive (no colony count)	Cardiac enlargement and hypertension	Leukopenia and anemia	440,000 units serum third day			
Index Value	4	4	5	2	3	2	20		x
Patient	50	Middle and lower lobe	Positive (no colony count)	Moderate anemia Tuberculosis	Developed nephritis and renal failure	Sulfapyridine on fourth day			
Index Value	5	3	5	2	7	2	24		x



were somewhat arbitrary because statistics are not available showing the effect of a single factor upon the mortality. Values assigned for *treatment*, however, are in accord with recognized results. We did not have a sufficient number of cases which had been treated with sulfathiazole when this study was made to include them in this report.

### RESULTS

Table IV shows the application of the method described above to typical patients.

Table V summarizes the index totals and mortality of the 325 cases studied and shows that patients in whom the total of index values never rose above eleven always recovered from their pneumonia, but, when totals went above this value, there was a very rapid increase in the rate. Table VI

TABLE V

INDEX TOTALS	NUMBER OF CASES	PER CENT OF TOTAL	DEATHS	PER CENT MORTALITY
4-6	34	10.5	0	0
7-11	133	40.9	0	0
12-17	99	30.5	27	27.2
18-22	36	11.1	28	77.8
23	23	7.0	22	95.7
TOTALS	325	100.0	77	23.7

indicates that this increase in rate is independent of the type of treatment used, but also shows the value of treatment in preventing complications which would cause high index totals. (Only 32.7 per cent of controls having totals below eleven against 69.4 per cent of the serum-treated cases and 70.4 per cent of those treated with sulfapyridine.)

TABLE VI

Index Totals	CONTROLS				TREATED WITH SERUM				TREATED WITH SULFAPYRIDINE			
	Number Cases	Per Cent of Total Number Cases	Deaths	Per Cent Mortality	Number Cases	Per Cent of Total Number Cases	Deaths	Per Cent Mortality	Number Cases	Per Cent of Total Number Cases	Deaths	Per Cent Mortality
4-6	0	0	0	—	14	18.7	0	0	20	22.7	0	0
7-11	53	32.7	0	0	38	50.7	0	0	42	47.7	0	0
12-17	61	37.7	15	24.6	15	20	5	33	23	26.1	7	30.4
18-22	30	18.5	24	80	5	6.6	4	80	1	1.2	0	—
23	18	11.1	17	94.4	3	4	3	100	2	2.3	2	100
TOTALS	162	100	56	34.6	75	100	12	16	88	100	9	10.1

Figure 1 graphically summarizes the data of Table VI.

The chief value of such a prognostic index is that it helps to point out with relative accuracy those cases in which the use of serum or chemotherapy is apt to be ineffective when used singly. These are the cases in whom intensive measures must be taken from the start. If the index total is found to be in the danger zone, we should not wait to note the effect of chemotherapy by itself, but should combine it with serum in large doses from the start. In this way many more lives can be saved, and the death rate in pneumonia cut below seven per cent. Finland, Lowell, and Spring<sup>5</sup> advocate the

combined use of chemotherapy with serum in patients with poor prognosis.

This type of statistical index also offers a practical method of comparing mortality figures from different institutions especially when different types of patients are being treated, and offers a means whereby new methods of treatment may be accurately compared with present methods.

### SUMMARY

A survey of all the important variables known to influence mortality in lobar pneumonia is necessary before prognosis can be established. One of the most important of these variables is the blood culture which

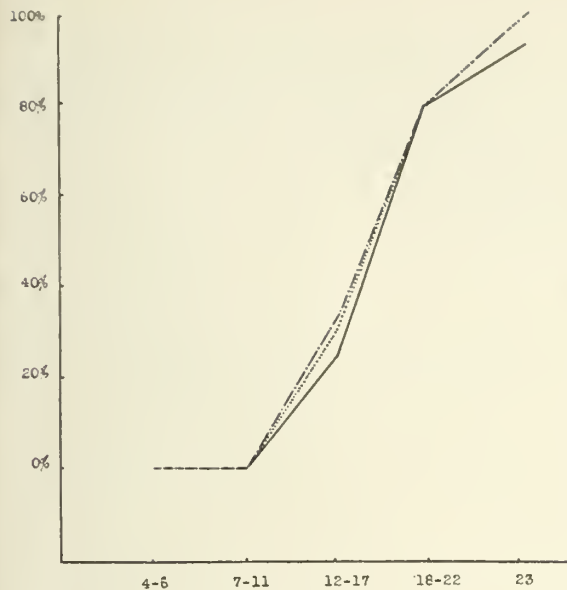


Fig. 1.

should certainly be done in every case. We have presented statistics to show how prognosis can be established by an index method. Whenever total values in this index are above eleven, poor prognosis is indicated, and intensive measures of therapy with both serum and chemotherapy are indicated. The index method also offers a valuable aid in the comparison of mortality statistics because we are comparing only comparable cases.

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#### DISCUSSION

DR. TIM J. MANSON (Chattanooga): Mr. President and Members of the State Association: To my mind, the pneumonia control program has

been one of the most important cooperative steps taken by this medical society. For indigent patients it has made available treatment that they might not otherwise have received, and it has proven that we can work with the public health services rather than be at cross purposes with them.

It is fortunate for us that such a high percentage of pneumonias as outlined so splendidly by Doctor Mitchell are caused by the coccal bacteria. When we think of having drugs that are useful in ninety-two to ninety-five per cent of pneumonia cases, we seem very lucky indeed compared with our position of only a few years ago. It is important to realize that chemotherapy is effective only in this group and is useless in the remaining five to eight per cent. This brings us once again to the importance of the real diagnosis of the disease and the identification of the offending organism. It is too easy for us to hear a pneumonic process in the chest, and then, with such wonderful drugs at hand, forget that it may not be helped by them.

In this program, we are very anxious to have all doctors get sputum for typing and blood cultures for a proper classification of the disease. We must strive always to maintain a close attachment to clinical medicine and stay away from anything that smacks of purely empirical treatment.

I am glad that Doctor Kemp had to revise his paper at the last moment and read the first part, because in it I think were some extremely useful things. There is little that I can say in addition about the sulfonamide drugs, as this part of the subject has been so carefully covered by the essayists, so I shall, by preference, say very little about them.

I should like to emphasize the five points that Doctor Zemp stressed: rest, both physical and mental; adequate nourishment, which I think we so often underestimate—the patients have a high temperature and are sick and so we neglect the dietary part of it; the importance of using oxygen freely, even before cyanosis develops; we must not forget that morphine is as important now as it ever was. Recently, as was mentioned, a new drug, sulfadiazene, has been discovered and is being used with what seems to be more success than sulfathiazole or sulfapyridine. It should be emphasized that, if the patient does not respond to chemotherapy alone, with a drop in temperature and a lessening of toxicity within twenty-four to thirty-six hours from sulfapyridine and thirty-six to forty-eight hours from sulfathiazole, we must seriously consider the use of antipneumococcal serum. Just because we have these splendid drugs is no reason to throw away something that before their advent proved very successful. This may be used alone or, probably better, in conjunction with the sulfonamide drugs.



I hope that this year's experience with the pneumonia control program is just a forerunner of what is to come. As we all become more familiar with the drugs and with the facilities for their use which have been made available to us, a very steady reduction of mortality from pneumonia should be accomplished.

I have enjoyed these papers very, very much.

DR. O. N. BRYAN (Closing): I am interested in the conflict with Dr. Zemp, if I did conflict with him. Of course, when the subject was assigned to me, I thought it really meant the sulfonamide group properly handled. I am sorry if I transgressed his territory.

DR. ZEMP: I am sure I bear no ill will for helping me out.

# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of  
Tennessee

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### THE YOUNG DOCTOR AND THE DRAFT

This editorial is inspired by the fact that a young doctor who was graduated by one of the medical schools in Tennessee in the spring of 1941 was recently inducted into military service as a private soldier.

There is nothing dishonorable, of course, in a young man being inducted into the military service as a private soldier.

It is appropriate to consider why this man has not been inducted into the military service as a medical officer. Authoritative information with regard to this incident is to the effect that this man had been given a deferred classification (1-D) by his Draft Board for the purpose of enabling him to complete his medical education.

Upon graduation he was advised both personally and by letter to seek a commission in the Medical Officers Reserve Corps. A doctor is not commissioned in the Medical

Officers Reserve Corps, of course, except upon his request for such a commission.

It is understood that the commission would have been issued to him in the event he stood a satisfactory physical and professional examination. It is also understood that he would not have been ordered to active duty until after the completion of a one-year internship, had he accepted a commission in the Medical Officers Reserve Corps.

He did not sign an application for a commission when he graduated. On the contrary, he accepted employment as a doctor in one of the construction projects connected with national defense. In about two months he left this job. He was then advised by his Draft Board that he had been given a deferred classification to enable him to complete his medical course. The deferred classification was given to him as a medical student. When he graduated he ceased to be a medical student and became a practitioner of medicine. His Draft Board then advised him that his case was up for reclassification into A-1, but at the same time advised him that if he had a commission in the Medical Officers Reserve Corps the Reserve Corps would not call him to active duty until his one-year internship was completed. Still this young man did not make application for a commission in the Medical Officers Reserve Corps. In view of the facts, his local Selective Service Board felt that he was entitled to no further deferment and sent him to the induction station for induction as a private soldier.

It has been suggested that this man should be commissioned at once as an officer in the Medical Officers Reserve Corps on the ground that many doctors are needed for service.

It is true that the Army needs men with medical training. It is true also that the Army needs men with something more than medical training. To be a good medical officer a graduate in medicine must have the desire and will to serve as a medical officer. He must have that other something which any good doctor must have in order to be a really good doctor, civilian or military. A man may have a very high grade in his scholastic work and still be unfit to serve



as a medical officer by reason of his spirit or attitude toward the service.

The principle has held always and still holds that the medical officers in the United States Army must be volunteers in every sense of the word. This is so for the reason that no one can compel a doctor to use diligence and sound judgment in the treatment of a sick person. He either does it willingly or does not do it well at all.

It is also true that a medical officer in the United States Army if serving unwillingly may destroy the morale or *esprit de corps* of any military organization he is connected with and by so doing become a menace, not a help. This is not so true of the private soldier. There are many tasks a private soldier can perform, such as peeling potatoes, where his attitude toward the service could have little effect on the morale of his organization. It is also true that his work can be supervised, as it always is.

The principle that a doctor must volunteer in the Army should live, and, in our opinion, it will live provided doctors permit it to live.

The action of the Draft Board in this case has been appropriate, just, and deserves and will receive the approval of the medical profession of the United States.

#### THE TASK AT HAND

Anatole France once said: "The future is hidden from us all, even from those who make it."

The newspapers recently have carried many news items with reference to conferences, activities, etc., having to do with "tomorrow's children" and other such topics.

No one is justified in criticizing an effort on the part of the far-seeing men and women to make the future of their children the best they can. The question should be raised, however, "Are we in position to plan any part of that future until the immediate emergency is over?"

We see a tremendous advantage in preserving one vital benefit for "tomorrow's children," and that one benefit is their freedom. Unless this particular benefit is vouchsafed no other benefit will matter very much.

We hold to the view then that any activity which consumes effort, energy, and money,

and which is foreign to the one major and vital objective might just as well be laid aside for the moment, and all the energies and efforts of those so engaged directed toward the accomplishment of the one major objective.

It might be of interest and value for the soldier on the firing line to stop and consider something of his future after the war is over, but it would not do for him to cease firing in order to engage in such contemplations.

As we see it, these activities have the tendency to divert our minds and energies from the one major activity which deserves the energies and thoughts of all in the interest of the children of today, tomorrow, and always.

#### THE FIVE-COUNTY MEDICAL SOCIETY

On Tuesday evening, October 28, the Five-County Medical Society, composed of Hardin, Lawrence, Lewis, Perry, and Wayne Counties, celebrated the fourteenth anniversary of its organization. A fine fish dinner was served at the Hassell Hotel in Waynesboro.

A history of the organization was presented by Dr. O. H. Williams, the secretary. The history had been published in *The Nashville Banner* as of that date. The following scientific program was given:

"Emergency Cases in General Practice," by Dr. Dexter L. Woods, Waynesboro; "Acute Symptoms in Abdominal Conditions," by Dr. H. H. Shoulders, Nashville; "The Newer Treatment for Pneumonia," by Dr. O. N. Bryan, Nashville.

The discussion of these various subjects was lively and general.

It seems appropriate to make this pointed observation. There is not a single county in the group which alone could have done much. The combined strength of the five did great things for all of them.

One of the features in the historic story was that an average of forty papers had been read before the society each year since its organization.

We congratulate the Five-County Society upon its achievements and point to it as an example of what can be done by the doctors in all the smaller counties in the state. All

the advantages of an active medical society are available to them if they will but cooperate in attaining them.

### POSTGRADUATE ACTIVITY

The Committee on Postgraduate Instruction in Internal Medicine has just released a statement with reference to the course to be given on internal medicine beginning January 5, 1942, with Dr. Robert P. McCombs of Philadelphia as instructor.

The general plan will correspond to that previously followed in the course of obstetrics and pediatrics.

Doctor McCombs is eminently qualified as an instructor.

The following is a brief summary of his training: He graduated at the University of Pennsylvania Medical School, one year rotating internship at the hospitals of the University of Indiana, Indianapolis. Residence: Abington Memorial Hospital, Abington, Pennsylvania, 1936-1937. Postgraduate: One year (1937-1938) at the New England Medical Center in Boston. Private practice: September of 1938 to January 1, 1941. Teaching: Assistant in medicine at Tufts College Medical School, 1937-1938; fourth-year students on district medical service and out-patient department; instruction to graduate physicians taking the course through the Bingham Fund at the Joseph H. Pratt Diagnostic Hospital; September of 1939 to date assistant demonstrator in medicine at Jefferson College Medical School in Philadelphia; ward and out-patient instruction of fourth-year medical students in internal medicine under direction of Dr. Garfield G. Duncan at the Pennsylvania Hospital.

Hospital staffs: Abington Memorial Hospital, assistant in medicine, service of Dr. George Morris Piersol, and director of out-patient department and chief of medical out-patient department, September, 1938, to present; Pennsylvania Hospital, assistant physician, service of Dr. Garfield G. Duncan, work in medical out-patient department three days a week and service on medical wards, July, 1939, to present.

As has been said before, this project began as an experiment to determine whether postgraduate work could be carried to the

physicians in the small towns and rural areas. Up to now the project has been a success. The success in this instance will depend on the cooperation of the profession in the small towns and rural areas.

### NATIONAL PHYSICIANS COMMITTEE

On another page of this issue will appear a condensed report on the status of American medicine as issued by the National Physicians Committee. It is included for the information of the membership.

### \*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY

John Humphrey Graves-----	Memphis
ORDERS REVOKED	
W. D. Burkhalter-----	Memphis
Harvey Lowry-----	Memphis
John McWilson-----	Memphis

\*Based on information published in the *Journal of the American Medical Association*.

## DEATHS

### DR. W. F. ROBERTS

Dr. W. F. Roberts, Troy; University of Tennessee, Medical Department, Nashville, 1894; aged seventy-two; died, September 26, 1941.

### DR. THOMAS AP R. JONES

Dr. Thomas Ap R. Jones, Knoxville; University of Michigan Medical School, Ann Arbor, 1891; aged seventy-five; died, October 9, 1941.

### DR. J. D. MCCORD

Dr. J. D. McCord, Lynchburg; University of Nashville, Medical Department, 1891; aged fifty-nine; died, October 31, 1941.

### DR. W. F. CANNON

Dr. W. F. Cannon, Fayetteville; Vanderbilt University, School of Medicine, 1892; died, November 5, 1941, from injuries received in an accident.



## RESOLUTIONS

## DR. S. N. PENLAND

Dr. S. N. Penland was born June 20, 1854, and passed from this life August 21, 1941, being past eighty-seven years of age at his death.

Doctor Penland graduated in medicine from Vanderbilt University in 1890, and then located at Madisonville, where he did a large practice for many years until infirmities of age forced him to retire many years ago.

Doctor Penland was a charter member of Monroe County Medical Society and took an active part in organized medicine. He took an active interest in all public matters and was always on the side of right. He took great interest in his church and Sunday school.

Doctor Penland was one of the most active Masons of his day. He took the degree of Masonry more than fifty years ago, and was a very bright and active member until just a few months before his death.

Doctor Penland never compromised his principle on any subject with the forces of evil. All his active practice was done in the days of horseback travel. Doctor Penland's friends were numbered by his acquaintances, and in his passing Monroe County and Madisonville have lost an ever true and upright citizen. The medical profession has lost an ethical and honored member, but we bow ourselves to the divine hand of him that doeth all things well, and shall abide firmly in the belief that he has been called from a life of sacrifice and suffering to a life of eternal peace and rest. *Therefore Be It Resolved, That:*

1. The Monroe County Medical Society has lost a true and faithful member.

2. We extend to his family our sincere sympathy.

3. A copy of these resolutions be spread on the minutes of the society, a copy be sent to the State Medical Society, and a copy be sent to his family.

H. C. SHEARER, M.D.,

R. C. KIMBRO, M.D.,

T. M. ROBERTS, M.D.,

*Committee.*

## NEWS NOTES AND COMMENTS

## MISSISSIPPI VALLEY MEDICAL EDITORS' ASSOCIATION

The first annual meeting of the Mississippi Valley Medical Editors' Association was held in Cedar Rapids, Iowa, October 1, under the presidency of Dr. George B. Luke of Waukegan, Illinois, editor of *Clinical Medicine*.

The new organization will hold annual meetings at the time and place of the Mississippi Valley Medical Society meeting.

## DR. JOSEPH B. DELEE HONORED

Dr. Joseph B. DeLee of Chicago, Illinois, professor emeritus of obstetrics and gynecology, University of Chicago, was awarded the Mississippi Valley Medical Society Distinguished Service Award for 1941 at the annual banquet of the society held at Cedar Rapids, Iowa, October 2. The award is given annually to an active member of the society for "unusual and distinguished service to the medical profession." The citation of the annual awards committee of the society in connection with Doctor DeLee's award was "Joseph Bolivar DeLee, physician, humanitarian, foremost in obstetrics, a credit to himself, his associates, his profession, and his country."

## CHANGE OF ADDRESS

J. E. Wilson, 1500 Madison Avenue, to 2365 Eastwood, Memphis, Tennessee.

E. S. Leek, Bell Buckle, to Petersburg, Tennessee.

J. T. Gordon, Petersburg, to Lewisburg, Tennessee.

R. W. Hahs, Trenton, to Murray, Kentucky.

O. L. Hill, Selmer, to Box 1562, Tulsa, Oklahoma.

Henry Moskowitz, Col. Tower Bldg., to 1324 Exchange Bldg., Memphis.

E. E. Byrd, Dayton, Ohio, to Veterans Administration Facility, Lake City, Florida.

Robert C. Berson, Ripley, to Brownsville, Tennessee.

H. H. Hudson, Memphis, to 3718 Keawel, Knoxville, Tennessee.

Russell B. James, Madison College, to South Pittsburg, Tennessee.

J. D. Henderson, Knoxville, to Boyds Creek, Tennessee.

J. M. Parrish, Jr., 701 N. E. Fifteenth Street, Oklahoma City, Oklahoma, to 537 N. W. 36 Terrace, Oklahoma City, Oklahoma.

#### MARVIN LEVINSOHN RESUMES COUNTERFEIT CHECK ACTIVITY

Marvin Levinsohn, alias Martin Davis, who was arrested March 21, 1938, in Providence, Rhode Island, and sentenced to three years in Lewisburg penitentiary for ne-



gotiating counterfeit checks purporting to have been issued by the Finance Department, United States Army for the Quartermaster, Governor's Island, New York, is operating again, apparently employing the same modus operandi. Levinsohn purchased a saxophone mouthpiece August 25 in a music store in Worcester, Massachusetts, and ordered flowers from a florist in Springfield, Massachusetts, August 26, for delivery in Omaha, Nebraska. His third check was cashed August 28 in New Haven, Connecticut, in renting accommodations in a rooming house (J-1-20072-S). Levinsohn is about forty years of age, five feet nine inches, weighs 125 pounds, brown eyes, dark brown hair combed straight back, sharp features, large nose, slender build, tubercular, may wear Army uniform in presenting checks, fingerprint classification is

9 R 1 0

29 R 00 18

After being committed to Lewisburg penitentiary in 1938, Levinsohn was trans-

ferred, January 5, 1939, to the Medical Center for Federal Prisoners, Springfield, Missouri. He was first arrested February 18, 1929, in Baltimore, Maryland, for passing similar checks, and apprehended again October 4, 1933, in Philadelphia, Pennsylvania, for a like offense. Levinsohn was surrendered in each instance to Army authorities as a deserter.

WASHINGTON, D.C. RATION FUND ACCOUNT	1941	No. 10443
QUARTERMASTER BANK OF THE UNITED STATES ARMY		
FURLOUGH RATION ACCOUNT		
Pay to the order of	STAFF SERGEANT MARTIN DAVIS A.S.N. 1017939	\$ 14.00
EXACTLY FOURTEEN DOLLARS AND NO CENTS		Dollars
L. J. MARSDEN LT COL FINANCE DEPT. U.S.A.		MR. MARSDEN
J. H. MARSDEN		

In as much as Levinsohn travels rapidly, all districts and subdistricts are instructed to contact their respective police departments and solicit their assistance in apprehending him. It should be observed that Levinsohn is using his former alias in cashing the first few checks, and also the name "L. J. MARSDEN, Lt. Col., Finance Dept., U. S. A." In his former operations he changed the name of payee in typing out the checks, the amount EXACTLY FOURTEEN DOLLARS AND NO CENTS being typed with a red ribbon. This legend on the new checks is also typed in red.

Facsimile reproduction of the check Levinsohn is now using is shown on the preceding page.

#### POSTGRADUATE CIRCUITS

Physicians throughout the state will be interested to know that the postgraduate course in internal medicine has been received with marked interest and attendance and a large number have enrolled in the three circuits which have been completed. Instruction was opened recently in West Tennessee which included the following centers with enrollments indicated:

Memphis .....	196
Memphis (colored) .....	23
Union City .....	22
Dyersburg .....	19
McKenzie .....	25
Trenton .....	20

Total .....305

Reports from the physicians who have experienced the course being given by Doctor McCombs indicate that he is giving a very informative and instructive course in medicine. Doctor McCombs' method of delivery and presentation and his clinical demonstrations, along with his lectures, have received high commendation by all. Doctors have also sought his consultation service with keen interest.

Instruction in the next circuit will open the first week in January in the cities of Nashville, Clarksville, Springfield, Gallatin, and Dickson. Arrangements have been completed for the lectures in Nashville to be held each Thursday evening at 8:00 o'clock at the Nashville General Hospital, and the

opening lecture will occur Thursday evening, January 8.

Registrations in the course can be mailed now to the office of the Postgraduate Medical Study, 1023 Third National Bank Building, in Nashville, or handed direct to any member of the Postgraduate Committee or organization of Davidson County Medical Society.

## MEDICAL SOCIETIES

### *Davidson County:*

October 14—"Arteriosclerotic Heart Disease," by Dr. W. R. Cate. Discussed by Dr. W. H. Witt.

October 21—"Appendicitis in Children," by Dr. Murray B. Davis. Discussed by Drs. W. C. Dixon and J. C. Overall.

October 28—"Meniere Syndrome," by Dr. Wm. de Gutierrez-Mahoney. Discussed by Drs. Wm. G. Kennon and E. L. Roberts.

November 4—"Recurrent Pancreatitis with Calculi," by Dr. James T. Kirtley, Jr. Discussed by Dr. Barney Brooks.

The Nashville Academy of Medicine and Davidson County Medical Society held their regular meeting Tuesday evening, November 11, 1941, in the assembly room on the sixth floor of the Doctors Building at 8:00 o'clock. Subject: "Survey of Health Conditions in Davidson County," by Dr. John J. Lentz. Discussion by Dr. O. N. Bryan.

HAMILTON V. GAYDEN, M.D.,

*Secretary.*

### *Knox County:*

The following papers are scheduled to be read:

November 18—"Some Legal Aspects of Public Health and Medicine," by Dr. Carter Williams.

November 25—"Eye Conditions" (moving pictures), by Dr. John Montgomery. Discussed by Drs. V. C. Dail and E. E. Miller.

December 2—"Heart Disease," by Dr. Dan Thomas. Discussed by Drs. B. M. Overholt and W. A. DeSautelle.

December 7—"Congenital Syphilis," by Dr. A. H. Lancaster. Discussed by Drs. W. R. Cross and Frank Faulkner.



December 16—Annual election of officers.

December 30—"Diabetes," by Dr. H. C. Long. Discussed by Drs. W. S. Austin and E. R. Zemp.

#### *Robertson County:*

The Robertson County Medical Society met October 13 in regular session at the hospital in Springfield.

The members present were Drs. W. S. Rude, W. P. Stone, A. R. Kempf, P. H. Elder, W. W. Porter, C. M. Banks, J. E. Wilkison, and John S. Freeman. Visitors were Drs. P. L. Pitt, Ashland City; S. J. Fentress, Goodlettsville; N. S. Shofner, Herman Spitz, and W. J. Core, Nashville; J. M. Harris, Thomasville.

Dr. John S. Freeman opened the program and introduced Dr. N. S. Shofner, who spoke on "Toxic Goiter," which was discussed by Drs. Core, Spitz, Banks, and Freeman.

Doctor Spitz reported a case of unusual metabolic rate.

Mrs. McAdams treated the society to a meal of Mexican goulash. It was voted that a goulash supper be an October feature each year.

No further business, we adjourned to meet at the hospital November 22.

JOHN S. FREEMAN, M.D., *Secretary*.

#### *Shelby County:*

October 21—Case report by Dr. C. G. Andrews. "A Fibromatous Fetus," by Dr. P. H. Wood.

"Remarks on Hyperthyroidism," by Dr. W. S. Lawrence. Discussed by Dr. Arthur Porter and Dr. C. H. Heacock.

"Renal Complications Following Use of Sulfadiazine," by Dr. S. L. Raines. Discussed by Drs. W. C. Colbert, Tom Moore, and H. K. Turley.

November 4—Symposium: "The Use and Abuse of Drugs," by Dr. A. P. Richardson; "In Anemia," by Dr. J. M. Bethea; "In Endocrine Disorders," by Dr. J. M. Brockman; "In Deficiency Diseases," by Dr. C. H. Sanford; "In Circulatory Diseases," by Dr. N. S. Stern. General discussion.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Influence of Inhalation Anesthetics on Liver. Hans Molitor and Samuel Kuna. *Anesthesia and Analgesia*, September-October, 1941.

The results following the administration of various anesthetics on the flow of bile, using rabbits, is the basis of this article. Five hundred rabbits were used in this test. After satisfactory anesthesia had been obtained, the cystic ducts were ligated and rubber catheters were inserted into the common duct and into the duodenum. The bile was collected at intervals, weighed, and immediately reinjected into the duodenum, thereby providing a continuous bile circulation throughout the experiment.

The following conclusions were noted. Chloroform depresses bile secretion, but less so when given with oxygen. Ethyl ether in low concentrations stimulates bile secretion, and in higher concentrations the secretion curve is similar to that of a nonanesthetized animal. Vinyl ether does not affect the bile secretions one way or the other. Nitrous oxide, when given with sufficient oxygen, does not affect the bile secretion. With inadequate supply of oxygen, there is a fall in bile secretion. Without oxygen, there is a cessation of bile flow. Cyclopropane administered with seventy-five per cent oxygen results in a pronounced rise of bile secretion. Ethylene administered with twenty per cent oxygen has no effect on bile secretion.

### FEVER THERAPY

By E. E. BROWN, M.D.  
Doctors Building, Nashville

A Department of Artificial Fever Therapy at Notre Dame Hospital, Montreal.

Physical pyretotherapy is much easier on the patient than an attack of malaria. During the latter he would have at first an intense chill for about an hour with general uneasiness, articular neuralgia, and then a rise of fever with profuse sudation, which leaves him very weak and anemic. Moreover, the death rate of malaria therapy ranges from four per cent to fifteen per cent. Of 139 patients treated by malaria, six died (approximately four per cent). On the other hand, no real discomforts, no serious sequelae, accompany or follow physical pyrexia. It is true that some subjects are more or less nervous, but they are easily calmed down. Others are somnolent during the entire length of the session and have a restful night. The next day, always amazing to those who have known malaria therapy, the patient will

get up, walk, eat, and smoke as if nothing had happened the day before. He will have a normal diet, and at the end of the treatment have lost neither weight nor strength. There is no period of convalescence.

There are even some who take ambulatory treatments, coming to the hospital once a week and going home the very next day after having had seven or eight hours of high temperature.

This leads us to emphasize an important advantage of physical pyretotherapy. A large number of neurosyphilitic persons, whose mental or physical condition is still good, are able to work. Many, indeed, are forced to do so and would find it impossible to pay for a long sojourn at the hospital. The possibility of "ambulatory" artificial fever minimizes this important economic problem and renders this valuable therapeutic agent available to everyone.

### OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Total Hysterectomy, Abdominal and Vaginal. W. C. Danforth, M.D., Evanston, Illinois. *American Journal of Obstetrics and Gynecology*, October, 1941, pp. 587-593.

For many years the most frequently employed method of removing the myomatous uterus or of excising the uterus for a number of other common causes has been subtotal hysterectomy. For many years the author was of the "subtotal school," removing the cervix when operating abdominally only when carcinoma of the corpus was being dealt with or when the cervix was markedly unhealthy. Not only because of the risk of cancer in the retained stump, but also to free his patients from the results of retention of the frequently unhealthy cervix, the author began to make much more frequent use of the total excision of the uterus in those patients who are operated upon abdominally. The debate as to the value of the total operation is not a new one. That carcinoma of the cervical stump is a real danger and that it occurs with a disturbing frequency must be admitted. The complete removal of the uterus, abdominally or vaginally, for many benign conditions as well as for carcinoma of the corpus, should be done more frequently by experienced pelvic surgeons, in as much as in their hands the patient runs no added risk. In institutions in which but little gynecologic surgery is done, the subtotal operation will be safer. The essayist concludes:

1. To avoid the danger of cancer in the retained stump and to free the patient from the annoyance which may be caused by the unhealthy stump, a wider use of the total removal of the uterus is recommended.

2. Total hysterectomy may be done either abdominally or vaginally, as the conditions of the individual case may suggest.

3. The gynecologic specialist should be able to remove the uterus either abdominally or vaginally with sufficient ease that his choice of operation is not influenced by his lack of experience with one or the other, nor should he choose the incomplete operation instead of either because he feels that he can do it more easily.

4. Technique of either of these operations may be developed by the experienced operator.

5. The objections which have been urged against the complete removal of the uterus disappear if the proper technique is used.

6. Total removal in experienced hands, either abdominally or vaginally, does not subject the patient to increased risk.

7. The operator of small experience in pelvic surgery should make use of the subtotal operation.

### OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

Changes in the Fundus Oculi Following Splanchnectomy in Malignant Hypertension. F. T. Tooke and J. V. V. Nichols. *Archives of Ophthalmology*, October, 1941.

Of 400 patients with cardiovascular hypertension, 100 on whom examination of the fundus oculi was performed were classed clinically and ophthalmoscopically as having essential hypertension. Of these twenty were operated on by the method of Penfield and Cone, but it was possible to follow up but fifteen. From every standpoint, including that of the fundus oculi, two were cured, three were markedly improved, and the condition of one was unchanged. However, the improvement in the fundus oculi was the most dramatic. An absence of changes in the fundus was noted both before and after operation in thirty-seven per cent.

It may be stated that this operation is disappointing in its effect on the blood pressure, but that the patients are improved when one takes into consideration symptoms and the condition of the fundus.

The article contains brief reports of the fifteen cases. A description is given of the pathologic changes in the eye of a patient who died without operation of malignant hypertension with hypertensive heart disease and nephritis with generalized arteriosclerosis.

The article is illustrated.

### PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

Effect of Chemotherapy on Pneumonia in Infants Under One Year of Age. Joseph Greengard, M.D.; William B. Raycraft, M.D.; and William G. Motel, M.D., Chicago. *American Journal of Diseases of Children*, October, 1941.

While much has appeared in the literature concerning chemotherapy in pneumonia in children and



adults, little has been written concerning the newer treatment of this disease in infants, the age which is the severest test of the therapy.

This study deals with eighty-nine infants, group one, observed from March to December, 1939, half of whom received sulfapyridine, and group two, 200 infants, all of whom received sulfapyridine. The sulfapyridine-treated cases received the drug as soon as diagnosed, one and one-half grains per pound body weight per day until the temperature had been normal for about forty-eight hours. All cases received the other measures ordinarily employed in the treatment of pneumonia, such as administration of oxygen, parenteral administration of fluids, blood transfusion and sedation, and stimulation as needed.

These cases were treated at Cook County Hospital, where the mortality in similar aged patients in 1937 and 1938, before chemotherapy was used, was thirty-two per cent and thirty-one per cent, respectively. In the group of 200 infants receiving sulfapyridine in 1940 the mortality was ten per cent. If cases in which death occurred in the twenty-four hours after hospitalization are excluded, the mortality was 7.5 per cent.

Patients receiving sulfapyridine had a shorter febrile period, fewer days of hospitalization, and fewer complications. The article is illustrated by several charts and tables.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

### Roentgen Irradiation in the Treatment of Inflammations.

E. P. Pendergrass and P. J. Hodes. *American Journal of Roentgenological and Radiological Therapy*, Vol. 45, No. 1, p. 74, January, 1941.

An analysis of 527 cases treated by irradiation in the University Hospital of the University of Pennsylvania consisting of bursitis, carbuncle, cellulitis, draining ears, erysipelas, erysipeloid, furuncle, gas gangrene, granuloma telangiectaticum, herpes simplex, parotitis, pneumonia, sinusitis, and verruca vulgaris.

Mechanisms involved in irradiation of inflammations:

A. Effect on Bacteria.—Practically all men agree that the beneficial effects of irradiation are not due to any direct germicidal action.

B. According to Menkin, X-ray first causes constriction of the minute blood vessels followed by vascular dilatation, slowing of the blood current, and increased seepage of plasma into the extracapillary area followed by coagulation of the plasma with formation of obstructive thrombi. Before the thrombi are formed phagocytes collect in the area. Thus fixation occurs much more rapidly in staphylococcus infections (one or two hours) than in streptococcus infections (one to two days).

Other workers have emphasized the importance of the destruction of leucocytes by irradiation and the liberation of protective antibodies. The authors believe that the effect of irradiation on blood vessels and circulation plays a more important part in the beneficial results which are observed.

C. Effect Upon Normal Immunological Responses.—There is apparently no direct stimulating effect upon the production of antibodies, and there may be some retarding influence. It is entirely possible, but as yet unproven, that the production of bacteriocidal globulins may be favorably influenced.

D. Effect Upon the Vascular System.—Dilatation of the capillary network and subcapillary plexus occurs uniformly following the administration of small doses of radiation—up to 300 r. Recent observations would indicate that this dilatation is present at the end of twenty-four hours, and the picture is that of continued increase flow of blood, and not fixation thrombi as described by Menkin. The authors believe that the pain relief is due to the more rapid elimination of toxins and edema by the artificially-produced hyperemic state.

The techniques used varied from 120 kilovolts with no filter to 200 kilovolts with one-half copper plus one aluminum filter.

The conditions which were successfully treated by the authors are as follows: bursitis, carbuncle, cellulitis and lymphangitis, temporal bone disease (acute and subacute otitis media without bone destruction), erysipelas, erysipeloid, furunculosis, gas gangrene, granuloma pyogenicum, herpes simplex, parotitis, pneumonia, sinusitis (hyperplastic type), plantar warts.

### SUMMARY

1. We have reviewed the physiological responses to irradiation, which may be of significance in the treatment of inflammations.
2. We have suggested that the vascular responses to irradiation are very important in this form of therapy.
3. We have surveyed some of the literature dealing with the roentgen treatment of inflammations and have attempted to bring together in tabular form some of the results reported by others.
4. We have analyzed our records and have reported our results in the treatment of inflammations with roentgen rays.
5. We have described in detail the technique we employ in the treatment of different inflammatory conditions.
6. We have attempted to stress the importance of considering roentgen therapy, but one step in the treatment of inflammations. Nature's inherent protective mechanisms are probably of more importance and must be maintained by adequate supportive measures if the best interests of the patient are to be served.



## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
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Studies of Anthemolysin Level in Patients with Staphylococcus Infections Treated with Staphylococcus Toxoid. Alfred B. Longacre, M.D. *Surgery*, 10: 576, October, 1941.

Although sulfathiazole may be of some value in treating staphylococcal infections, the prevention of these infections is of much greater importance. There is great variation in the resistance of different individuals to conditions caused by the staphylococcus, and different strains of this organism produce antigens in varying strengths. In studying anthemolysin levels of normal human sera it was found by several investigators to vary from .15 to 1.5 units. Sera of persons with staphylococcal infections were found by some authors to show an elevated anthemolysin titer, while others found almost the same titer as is found in normal sera.

Staphylococcal toxoid shows promise as an immunizing agent. In treating chronic or recurrent staphylococcal infections, such as osteomyelitis or lesions of the skin and subcutaneous tissues, the clinical results do not always coincide with the rise in the anthemolysin titer of the serum. Osteomyelitis cases show the greatest rise, but the clinical results are not so good as in more superficial lesions. In the author's series of cases hemolytic staphylococcus was cultured from the lesion in every instance. The toxoid used was prepared by the action of pepsin enzyme in staphylococcal filtrates of known toxin titers. Pepsin-digested toxoids do not show as much local or systemic reaction as other types.

In the author's earlier cases a 1:10 dilution of the toxoid was used beginning with .1 cubic centimeter, increasing each dose by .1 cubic centimeter up to .9 cubic centimeter. The undiluted toxoid was given in a similar manner. The injections were given at three to seven-day intervals. Later, since reactions were so few and so mild, the undiluted toxoid was given every two to four days beginning with .1 cubic centimeter to .5 cubic centimeter, the total dose being six to 8.5 cubic centimeters. Nine of ten cases of osteomyelitis showed a definite elevation of their titer following the toxoid injections, but clinically showed little evidence of local improvement. In soft tissue lesions, such as furunculosis, carbuncles, pustular dermatitis, etc., there was much less elevation of the anthemolysin level, but the clinical results were generally good. Although toxoid therapy is still not out of the experimental stage, its use is certainly warranted, and there is clinical evidence of its usefulness in many recurrent or chronic staphylococcal infections.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

Ureteral Strictures in Relation to Hypertension. J. W. Pennington. *Journal of Urology*, September, 1941.

In recent years there have been numerous clinical reports of unilateral renal disease with hypertension relieved by nephrectomy; however, very little has been said regarding ureteral obstruction and its relation to high blood pressure.

The work of Harrison, Mason, Resnik, and Rainey demonstrates that renal ischemia can be produced by ligation of one or both ureters. Such reports suggest the possibility that ureteral strictures or stasis in the ureter and kidney pelvis might cause hypertension in certain cases.

Ritch relieved hypertension in two cases by ureteral dilatation. Schroeder and Steele are of the opinion that fifty per cent of their cases of essential hypertension have urinary obstruction. MacKenzie and Seng feel that all cases of essential hypertension should be investigated for obstruction of the upper or lower urinary tract. In 100 autopsies performed by Wightman, pathological changes in the kidney were demonstrated in all cases with more than two cubic centimeters of residual urine in the kidneys.

This author reports four cases of hypertension, three of which had intermittent vague pain over one or both renal areas, and the other a toxemia of pregnancy, the high blood pressure of all being relieved by repeated ureteral dilatations.

This report suggests a possible means of preventing or relieving hypertension in certain cases. It offers a relatively simple method of relief, and should encourage the cooperation of the general practitioner, internist, and urologist in handling cases of hypertension.

## BOOK REVIEW

Shock Treatment in Psychiatry: A Manual. Lucie Jessner, M.D., Ph.D., and V. Gerard Ryan, M.D. pp. 123. Published by Grune and Stratton, Inc., New York. Price, \$3.50.

The book is an easily read, authoritative manual of 123 pages devoted to the detailed description of the three types of shock therapy—"insulin shock," "metrazol shock," and "electro shock"—used in the treatment of psychiatric disorders. Besides a valuable bibliography of 353 references to an already voluminous literature, it also contains an introduction by Dr. Harry C. Solomon, professor of clinical psychiatry, Harvard Medical School, from which the following is quoted: "One cannot view these therapeutic approaches without being conscious that a new era has opened in psychiatry. If a few convulsions completely change the emotional tone of an individual, what is the mecha-

nism involved? Indeed, we are compelled to more intensive study of the cause of emotional responses. If paranoid delusions are wafted away during the course of insulin comas, one is led to speculation concerning the brain function that leads to their formation. New methods of study must be evolved. The psychiatrist, the neurologist, the neuropathologist, and the physiologist must join in the attempt to understand brain and mind function."

This book is the first of its kind to make its appearance. Its directness of approach, its simplicity of language so seldom seen in psychiatric literature, and its basic honesty portrayed in the delineation of the bad as well as the good results obtained should gain for it a wide distribution. It should be read by every internist, surgeon, or other specialist who refers his psychiatric cases for treatment, and particularly by those who have been made skeptical by reading only of the accidents, such as fractures, which occurred during the first

few months of usage, and which have been reduced to a minimum as experience has been gained in prevention. Also the damage to the central nervous system by loss of cells and vascular injury that has been demonstrated by animal experimentation is given proper consideration and evaluation. Any permanent, clinically-recognizable defects are of great rarity, and are negligible when the nature of the disease under treatment is considered.

The authors make no attempt to advance any new theories as to the rationale of the shock therapies or to discuss other forms of treatment that might be considered as forms of shock—artificial fever, prolonged sleep, freezing, carbon dioxide inhalation, and aseptic meningitis.

The manual is a definite contribution to the literature and to the knowledge of a therapy that will continue to be used until something better is substituted.

J. P. G.



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## **LESIONS OF THE CERVIX\***

W. L. WILLIAMSON, M.D., Department of Gynecology, University of Tennessee, Memphis

The most important diseases in medicine are: first, those which are most common; second, those which cause the greatest discomfort; and, third, those which lead to the most serious consequences.

In the field of gynecology, the above-mentioned conditions are most certainly found in lesions of the cervix. They occur in seventy-five per cent of women, their onset is insidious, they are highly resistant to the ordinary therapeutic methods in common use and show little or no tendency to spontaneous cure. The recognition and treatment of these lesions by the physician would add great comfort to thousands of women and save the lives of many hundreds each year. The abnormal cervix is easily recognized and responds very readily to treatments which are just as easily given.

The chief object in writing this paper is to say something which will stimulate more physicians to examine the cervix by palpation and inspection. An excuse offered is that vaginal examinations are objectional. Objectional to whom, the patient or the physician? How many patients have refused to have a pelvic examination after you explained your reason for one? How many times have you postponed making a pelvic examination when the patient's his-

tory suggested the advisability of such an examination? Yet you may be one who preaches education of the laity. I fear that often our desire to educate the laity is superior to our eagerness to be as efficient as we know how to be.

For example, Mrs. A., age twenty-eight years, was given numerous hypodermics of pharmaceuticals for bleeding, which continued. No pelvic examination was made. She was sent to an X-ray doctor, who gave her treatment, and her flow was so profuse she had to be hospitalized. A vaginal speculum revealed a fibroid polyp presenting at the external os. She started her menopause following the X-ray treatment.

Another woman, twenty-three years of age, with one child, two, and another three years old, was two and a half months pregnant with a third child. She had a criminal abortion performed. She had profuse hemorrhage and was curetted in the hospital. (All of us at one time or another have failed to get perfect results in these curettages.) She continued to flow. Without pelvic examination, she was sent to an X-ray office. The first series of five treatments failed to stop the flow. So it was followed by a series of six treatments. A speculum revealed a large plug of membranes in the external os. Today she is a frail, nervous individual, with a uterus about the size of

\*Read before the Tennessee State Medical Association, Nashville, April 8, 9, 10, 1941.



one's thumb due to premature menopause produced by irradiation.

A woman of forty-seven had a flow, or blood-stained discharge, continuously for a year. She had received everything by hypodermic with which her doctor had been detailed. She thought her doctor had been faithful. But he had not made a pelvic examination. She had a cervical polyp protruding from the external os.

Many of you have had similar experiences. Let us at least place the burden of a neglected pelvic examination on our patients and get it off our shoulders, where it is resting, very largely, at present.

Mention should be made of the common lesions of the cervix, viz.—cervicitis, or endocervicitis, erosions, eversion, cystic changes, cervical lacerations, and cervical strictures. These lesions are easily recognized as something abnormal even by a very casual inspection. They are conditions which produce very annoying symptoms. We will only mention the common symptoms produced by these lesions, viz.—discharge, backache, lower abdominal pain, dysuria, metrorrhagia, menorrhagia, dysmenorrhea, pruritus, headache, sterility, and dyspareunia. How many hysterectomies have been done for the relief of these symptoms due to lesions only in the cervix? If the above lesions and symptoms were no more than we see and the discomfort they cause, they would be worthy of our best efforts in effecting a cure. These symptoms are not the end results. Today we know it is much better and often easier to prevent than to cure. The infected cervix may be a focus of infection causing more serious ailments. They are not as common a cause as infected teeth or tonsils, but if evidence of a focus of infection exists, the cervix should be considered as a probable site.

Sterility, a very common result of cervicitis, is a very serious problem to some women, and a very difficult condition, at times, for the physician to cure. The cervix should be examined before the hypodermics are started. They will not relieve the most common lesion, cervicitis. If you also will examine the cervix, you will be surprised at the number of strictures you will find. There is nothing which will give you and

the patient's family as much pleasure as removing the cause of sterility.

A long-continued inflammation of the cervix will result in a fibrosis of the cervix. This is responsible for a dystocia. The cervix will dilate more slowly and will be less elastic and more liable to laceration. This is uncommon because the cervicitis prevents pregnancy.

The last end result of these lesions to be mentioned, and by far the most important, is carcinoma. Over sixty years ago Goodell of Philadelphia, said: "In my experience, cancer of the cervix very rarely, indeed, occurs in women who have never borne children. But I have had repeated ocular evidence that it started from the constantly raw, irritated surface of a cervical rent."

There is now accumulated evidence on many thousands of cases of treated cervical lesions. The incidence of cancer is so small in this group that the most skeptical must admit that cancer has been prevented. Nevertheless, 13,000 women die annually in this country from cancer of the uterus. The responsibility is largely ours.

In the June, 1940, number of the *American Journal of Obstetrics and Gynecology*, Teahan and Wammock make the following statements in their summary of an article on treatment of cervical cancer: "The interval between the appearance of the first sign and the patient's first visit to a physician averages five and one-half months. The interval between the first visit to a physician and the first pelvic examination averages two months. The interval between the first pelvic examination and the institution of cancer treatment averages three and one-half months. There is an average delay of eleven months between the appearance of the first sign and the initiation of cancer treatment. While the patient is consulting a physician more promptly after the appearance of the initial sign, there does not appear to be any shortening of the interval between the first visit and the first pelvic examination." Education of the laity would not change these observations very materially.

After cancer of the cervix develops, it is best treated by X-ray and radium, in a well-equipped clinic, by well-trained men. They

are curing approximately twenty-five per cent of their patients. Only a small number of cancer patients can have the advantages of these clinics. There are unquestionably more women cured of cancer of the uterus today than ever before. Still ninety per cent of women who have cancer of the uterus die with that condition.

In closing, may I quote from an article by Doctor Cashman of Pittsburgh, published in the February, 1941, number of the *American Journal of Obstetrics and Gynecology*: "As far as we know, deep cauterization of the cervix has been an effective method of preventing cancer in our series of 10,000 cases, for only two cases of cancer of the cervix are known to have occurred in this series. In our series, it was learned that there are no symptoms of early cancer, for many of these cases were hopeless when the first symptom occurred. We stated at the time, thirteen years ago, that the hope of control of cancer of the cervix lay *not* in the method of treatment, but in early diagnosis by periodic examination of women, and in the prevention of cancer by adequate treatment of the pre-existing lesion, chronic cervicitis. Or, even better, the prevention of cervicitis by the proper treatment of the cervix after delivery. That is still our belief. It is our belief and experience that a cervix, healed and free of infected mucosa, is no more liable to develop cancer than the surrounding vaginal mucosa."

#### DISCUSSION

DR. W. C. DIXON (Nashville): Mr. President: Doctor Williamson's paper has graphically called to our attention some of the tragedies which are to be encountered in patients who are treated for bleeding without satisfactory examination. He has also shown us that, in a large number of cases of proven cancer, a period of five and a half months' delay in the institution of adequate treatment was due to the doctor; five and a half months was due to the woman. Five and a half months was due to the doctor; that is, two months after the woman consulted the doctor she was examined, and three and a half months after that she had the institution of treatment for malignancy.

I think the most important feature of his paper is that feature dealing with the disastrous results that may follow very common cervical lesions, that is, the development of malignancy in relationship to cervical lesions. As he pointed out,

lesions of the cervix are extremely common. Every woman who bears a child receives some damage to her cervix, and in most women this is in the form of a laceration with subsequent infection of the endocervical mucous membrane. You recall that the endocervical mucous membrane is lined by columnar epithelial cells, whereas the vaginal portion of the cervix is lined by squamous epithelial cells. The columnar epithelial cells form racemose glands extending down into the wall of the cervix, and these glands, grape-like in form, empty into the endocervix by one small duct, so that you have here a fine area for organisms to live and prosper if this area becomes infected.

The laceration is usually a bilateral laceration; the lips of the cervix separate, and the endocervical mucosa is exposed to the vaginal secretions. That means it is exposed to all of the organisms which may be present in the vagina, so that these glands may become infected. Not only that, but the endocervical mucous membrane, which is normally bathed by alkaline secretions, is exposed to the acid secretions of the vagina, so that we have here ideal conditions for the development of malignancy, provided we accept the fact that malignancy develops on the basis of chronic irritation, because we not only have a chronic infection with various types of organisms, but we also have cells exposed to chemical trauma; that is, a cell that normally should be bathed by alkaline secretions is exposed to an acid secretion.

The doctor spoke of erosions, another very common type of cervical lesion. As you all know, an erosion consists in the extension of the columnar epithelial cells from the endocervix out onto the vaginal portion of the cervix, displacing the squamous cells here. That results in the characteristic red velvety area around the cervical os; that is what an erosion is. It is frequently called an ulceration, but it is not an ulceration; it is merely a change in the type of epithelial cell from the squamous cell where the columnar cell has grown out over this area. You have a constant ebb and flow between the columnar epithelium and the squamous epithelium, with one of the types of cells being constantly exposed to a hostile chemical environment. So we have in these two lesions ideal conditions for the interplay of chronic irritation on the action of cells. Erosions are not necessarily venereal in origin. There is a congenital type of erosion; some children are born with erosions; many virgins have erosions. It is not a stigma of infectious process at all.

Doctor Williamson has shown that practically ninety per cent of cancers of the cervix originate in women who have borne children. The late Doctor Graves made the statement that in his experience the other ten per cent occurred in women who had had erosions.

I was sorry Doctor Williamson did not speak a little more about cauterization. He showed us conization and amputation of the cervix. The majority of these lesions can be treated in any doctor's



office by a nasal-tip cautery if he will take the trouble to examine these women and use this cautery. It is an office procedure and can be done readily by anyone with ordinary office equipment.

DR. HERBERT ACUFF (Knoxville): Mr. Chairman and Gentlemen of the Society: I want to thank you for the opportunity of discussing this very excellent paper of Doctor Williamson's. Always when Doctor Williamson speaks we get something most practical, and it serves to remind us that the department of gynecology in the University of Tennessee is in safe hands. I again want to thank him for the very excellent presentation he has made, and to add a few remarks to it.

In the five minutes that one has to discuss a paper, obviously, one must choose just one phase of that paper to discuss, and because there is such a tremendous toll from cancer alone, I shall confine my remarks to five slides which I believe will drive home the message which I have.

(Slide.) You know that cancer clinically is divided into the two types, the infiltrating and the proliferating type. The proliferating type, speaking clinically now because we are not going into this thing too technically in five minutes, or the papillary type or the so-called cauliflower type, is the type that you see here, and this is the type in which, on presentation of the speculum, one sees the marked filling of the whole vaginal vault with this carcinomatous tissue. Strange to say, this thing will melt down rather rapidly, and oftentimes there is no other disease. Doctor Dixon told you about the cylindrical and the columnar type of epithelial tissues which grow on the endocervix. When it goes higher than that, it gets into the glandular epithelium, which then becomes a type of adenocarcinoma and which is rather highly resistant, but at the same time is amenable to surgery.

(Slide.) This is the type that I want to call attention to. This is the type that so many of us see when we make an examination, and the man who is not very discriminating in his examination will make his examination and say, "Well, this case is normal. Here is this cervical mucosa which is normal. The part of the presenting so-called squamous cell approach to the cervix is perfectly normal, and yet on the inside you see this tremendous crater of the endocervical breakdown, which is the thing that causes so many of us to blunder.

Where do we stumble? So many times, especially nowadays—and I was very glad to hear Doctor Williamson condemn trichomonas as being the cause for all of the discharges which one has, because it is not—when one makes this type of an observation and sees an intact squamous cell mucosa on the outside, one then determines that this is a case of trichomonas and starts giving vinegar douches or a picrate of some variety. Further than that, I would like to appeal for just one thing, that each and every case be examined

this way: that one of the small types of the uterine sounds, not dilators, but sounds, a type of little sound that one can introduce into the cervical canal, be used, and with one little swoop of the instrument around backwards and forth, you can find whether or not it is confined to the normal cervical canal or whether it is going down into a crater, and if and when it gets into this crater, of course, you then are supposed to carry that examination a little bit further and go in for scrapings, and so forth, and send them to the pathologist for biopsy.

(Slide.) Here is a combination of a type that one often sees, in which the proliferating type of carcinoma is seen in the cervix of the uterus, and in which also the glandular epithelium of the fundus is enlarged, and has also become diseased, typifying two types of carcinoma in the same patient, namely, the squamous cell variety in the cervix and the adenocarcinoma in the fundus of the uterus.

(Slide.) These are conditions that one meets in everyday practice. How are we going to curtail the many mistakes that we make? I personally am a protege of Schiller in his work, picking out a great many of the pitfalls that we have with Lugol's reaction. You know, of course, the principle of the Lugol reaction, that the normal epithelium of the cervix contains a great deal of glycogen, and that glycogen does not take an iodine stain, and, when and if it becomes diseased, the water-insoluble glycogen, of course, is the first thing to leave, and consequently it will not take the stain of the iodine content. So it has been our office practice for a long time, and it certainly has saved me many times, because it guides me to a little bit more investigation; namely, that the vagina is filled with ten cubic centimeters of one per cent Lugol's solution after, of course, the cervix has been thoroughly cleansed, and that is allowed to remain there for one minute, after which it is removed, and if you find these little white spots around near the cervical canal, and even if it is more grossly white like this one here, you should not make a diagnosis of carcinoma from that, certainly not, but it does direct your attention to the area which you can bite off with your biopsy forceps and send to your pathologist, and that gives you the positive diagnosis.

I would like to appeal to men who are doing general work and who do not have all of the facilities with which to do it, to carry out this rather simple procedure, because I believe a great many of the men in the country are using it now as one of the mileposts, one of the signs, to direct them to a more complete investigation.

(Slide.) How does this cancer kill? It is obvious. This picture is thrown on here for one purpose, to show you that the parametrial invasion, of course, means the direct invasion from the uterus. After the parametrial invasion by direct extension, then coming to the bladder, then going to the rectum (it always comes to the bladder first



because the bladder has no separation between the uterus and the bladder wall, whereas, in the posterior portion of the uterus, going toward the rectum, you always have the cul-de-sac which helps to preserve and prevent immediate extension). Following, as it usually does, the external iliac chain of glands, it comes on along to where it crosses the ureter, and there it is that it meets with the communicating branches from the ileacs and inguinal glands. Then you can see the futility of making an effort to treat by surgery or even with X-ray treatments an extension of squamous cell carcinoma of the cervix by treating it over the lower area or the area below the umbilicus. It is perfectly silly, for the reason that after a few months the metastasis has invaded these glands and goes almost to the extent of the origin of the renal vessels, and it is there that your nephropathies usually close the seam of carcinomatous patients, especially the ones who are advanced as much as six to twelve months.

If any type of operative procedure in squamous-cell carcinoma of the cervix, which is contraindicated at this stage of the game, did not come back and take in all of the parametrial glands and the ileac and inguinal glands, it would do no good. If the X-ray man comes and treats below the umbilicus, you can see that he has left the things that cause the death of the patient, because he has left the extension high up into the renal vessels, which will really block off and starve out the portion of the extension which is high up in the glands and which goes from there, of course, to the lungs and to the bones and invades the peritoneum.

DR. J. F. GALLAGHER (Nashville): I must confess that, on first hearing Doctor Williamson's paper, I was astonished, and my astonishment arose from the very elementary type of paper which he read. I wondered why the head of the department of gynecology of the state university would deem it expedient to deal with these very fundamental and elementary subjects, but, in listening further to his case reports, I think he was more than justified in the time that he has taken to call the attention of the members to the necessity of a physical examination. That is a trite subject and one that is almost worn threadbare. One who is perfectly honest with himself and with everyone else must admit that, using every diagnostic means, he is often unable to make a diagnosis, and he is just as often wrong.

I want to emphasize just one point, and that is the simplicity of the management of the most common of the lesions that are so troublesome and so potentially dangerous. It is relatively rare that a radical operation, as the Sturmdorf, whether you cone it out with a knife or a cautery it matters not, is necessary. Certainly I do not think it ought to be resorted to until a very simple procedure, as Doctor Dixon has emphasized, is attempted. At the same time, if cancer is at all suspected, take a generous specimen and send it to

a competent pathologist. It is well known that the cervix is a relatively insensitive organ except at the level of the internal os. A good exposure is necessary. Doctor Williamson demonstrated to us the full array of the specula, and you can take your choice. The one you can get the best use from is the one you should use. The point is, get a good exposure, get a generous specimen if cancer is suspected, and then for the common lesion, the so-called erosion, the chronic discharge, whether gonorrhea or endothelial proliferative, with a simple nasal-tip cautery that can be bought almost for a song, and a tenaculum that will hold, and a biopsy forceps, one can equip oneself not only with a diagnostic armamentarium, but one that will be very valuable in the cure of these conditions.

Radial cauterization of these cervixes with dull red heat, in your office, will astonish you in the cure of the discharge and the return to normal of the cervix. Parenthetically, one might say that you must caution your patient immediately after cauterization that the discharge will be worse, but most of these cases can be painlessly and effectively cured in your office without radical procedures.

I do not think there is anything more important than to urge us, whether we are dealing with the vagina or any other part, to attempt to make a correct diagnosis. I think the matter of therapeutics, in some quarters at least, has gone a little too far trying to find something new. It is remindful of a story, no doubt apocryphal but, nevertheless, worth reporting, that in some quarters, since the introduction of sulfanilamide and all the rest, when a patient is seen, he is given sulfanilamide for three days, and, if he is not better then, they examine the patient.

DR. HARRY JENKINS (Knoxville): I would like to take just a minute to continue, if I may, this discussion concerning painless treatment in the office. This has particularly to do with the treatment of erosions after delivery, and it has been my experience in my rather limited time in medicine that most of the post-partum cases we see at six weeks do have some degree of erosion. While we all admit that the cervix is painless, as brought out by Doctor Gallagher, the vaginal wall is not, and, even though a dull red heat is used on the cautery, my patients certainly have a tendency to jump from the burning sensation which they get when the cautery is introduced into the vagina. In addition to that, the smell of burnt hamburger is none too pleasant in the office, in my opinion.

As far as the control of the heat is concerned, I experimented some few years ago by going down to a builders' supply office and buying some asbestos paper, which is a very little bit thicker than ordinary writing paper, and making a cylinder out of this asbestos paper, or, what is perhaps still better, using two pieces and lining the Graves' speculum with this asbestos paper previous to cauterization. In this way, all the heat is diverted

from the vaginal wall and the patient does not have a tendency to jump around quite so much.

In the last few years, however, I have been using coagulation therapy rather than cauterization. On an ordinary piece of fresh beef you can see that a coagulation unit will coagulate to the depth of as much as a quarter of an inch, depending upon how much power you turn onto the coagulating unit. I have found this coagulating unit to be absolutely painless, and, because of this, the patients will be much more enthusiastic about getting upon the table and allowing the cervix to be treated, as well as because the patient is not going to suffer any pain, the doctor who is treating her will with more alacrity carry out the coagulation, in my opinion, with as good results as is gotten with cauterization. For that reason, I prefer coagulation to cauterization on erosions of the cervix after delivery.

DR. W. L. WILLIAMSON (closing): I would like to thank Doctors Dixon, Acuff, Jenkins, and

Gallagher for their discussion and added information to this subject. I am especially thankful to Doctor Gallagher for pointing out to you my chief object in presenting this subject, which, as he said, is more or less threadbare. Nevertheless, my observation in recent years made me feel that it was my duty. Too much cannot be said to encourage closer observation of these cases while examination may still be of value.

The asbestos curtain, mentioned by Doctor Jenkins, would be of value in the use of Percy cautery or intensive heat over a prolonged period. But for conization, coagulation, or the nasal cautery tip, which is the most universally and successfully used, such insulation would not be needed. There is very little sensation in the average cervix. It is an individual problem. As Doctor Gallagher mentioned, the internal os is always very sensitive, but few women are very sensitive around the external os.

## PIONEER PHYSICIANS AND MEDICINE IN MIDDLE TENNESSEE\*

T. V. WOODRING, M.D., Nashville

When the pioneers came to settle what is now Middle Tennessee, they brought with them as a part of their cultural heritage such knowledge and such superstitions regarding the treatment of diseases as were current among the Americans of that day. For some years there were no regular physicians on the frontier; and, when the first physicians did arrive, so unspecialized were occupations in the primitive frontier communities that the practice of "physic," to use a term at that time current, was only one of several occupations in which a man might be engaged. For many years the only doctor in Middle Tennessee was a horse doctor.

Many of the settlers, of course, were dependent upon their own administrations when they became ill. As evidenced by John Sevier's diary, men seemed to have exchanged prescriptions for rheumatism and fever as women exchanged recipes for bread and cakes.

Doctors are usually not military men or political leaders, and historians seldom record the deeds of the doctors. It should be borne in mind that doctors who maintain themselves and families by their professional work must serve a local community of considerable size.

The earlier ones, therefore, depended in part on other pursuits for support. There were no railroads in this section nor ferries to cross the streams, only beaten pathways through the forests. The doctor's field of professional activity at that time was much more circumscribed than at the present time, and his work was one of great hardship and exposure. It must be borne in mind, also, that the early settlers were a hardy, healthy people who lived much in the open air and sunshine, and who were inured to exposure and hardships. They were a resourceful and self-reliant people. They had no Red Cross training in the care of injury and minor illness, but they had much

practical knowledge of emergency and home care for injuries and diseases.

The pioneers had practical experience in layman's care of minor and some major injuries. In their warfare with the Indians, there were many tomahawk and gunshot wounds and scalped heads to be treated. There were no general or local anesthetics at that time, and it was more than a century before the antiseptic era. The most common diseases were rheumatism and malarial fever. Tuberculosis was almost unknown. There were probably no tubercular foci for infection in this new country; and, if any came in with the new arrivals, they were probably cured by the open-air life and plain, wholesome food. Smallpox was the dreaded disease.

The first operation performed in this section was the outcome of the following incident:<sup>1</sup> On January 11, 1781, a small party of Indians had arrived in the neighborhood; and, while John Tucker, Joseph Hendricks, and David Hood were going from Freeland's Station (Eighth Avenue, North, and Taylor Street) to the Bluffs, they were fired upon from ambush near the French Lick Sulphur Spring. The arms of John Tucker and Joseph Hendricks were broken, and David Hood was shot down and scalped. The Indian's scalping knife being very dull, the scalp did not yield very readily, forcing the Indian to take a new hold and saw away until the scalp came off. After scalping Hood, they stomped upon him to dislocate his neck and left him for dead. He lay perfectly still until the Indians disappeared. When he cautiously peeped out from among the canes, he found himself alone. He then crawled slowly toward the stockade, but fainted from loss of blood. He lay in this condition until the men from the fort, who had heard the firing, found him, carried him into the fort, and laid him in an out-house within the stockade. This same day James Robertson, who had just returned from Kentucky with a supply of powder and lead, left the Bluffs and went to Freeland's Station to see his wife, who had that day given birth to a son, the first white male

\*Read before the Nashville Academy of Medicine and Davidson County Medical Society, September 23, 1941.



to be born in the city of Nashville, this child being the eminent Dr. Felix Robertson. During the night, the Chickasaws attacked the fort at Freeland's Station, but were driven off. After the night attack by the Indians, early next morning James Robertson returned to the Bluffs and went to see Hood, who was still in the outhouse. Finding him alive, he inquired how he was. "Not dead yet," he replied, "and I believe I would get well if I had half a chance." James Robertson told him that he would have a whole chance and dressed his head. The treatment of the scalped head was curious. On the Holston River he had seen many persons who had been scalped and learned there from a traveling French surgeon how to treat them.

He took a pegging awl and perforated thickly the whole naked space; this was done that granulation might spring up, unite, and form a covering to the denuded skull before it should die and exfoliate. This operation became so common that there were persons in every station who could perform it. David Hood recovered and lived many years afterwards.

The pioneers appeared generally to understand the proper management of gunshot wounds. As to disease, there was very little of that among the settlers for some time, and this generally of the intermittent types of fever. This they soon relieved by purging freely with white walnut pills, and then taking freely of the decoction of dogwood bark.

In a few years, when it was ascertained that the little band of pioneers on the Cumberland had taken a firm hold, and seemed determined to keep it, enterprising adventurers began to flock to it, and among them came physicians.

"Dr. James White was the first physician who settled at Nashville in 1784. He came from North Carolina. He was educated in St. Omer's, France, and finished his medical education at Edinborough, Scotland. He had studied divinity, law, and medicine, and was a man of extensive literary knowledge. He possessed a very high order of talents. He excelled in conversational powers on grave or humorous subjects. Perhaps no man told a story better, or could, for a great-

er length of time, enchant, by his conversation, a company of friends. He had a great many eccentricities and would take occasional sprees of drinking; and, while on one, he would dress up in buckskins and march through the streets with a gourd of whisky under his arm, and almost compel every person he met to drink with him.

"On one of these sprees he met Major William T. Lewis, a very genteel, respectable, and wealthy gentleman, whom he asked to drink with him. Lewis refused to drink out of his gourd, and White knocked him down, calling him an aristocratic rascal. But when not in this state, White's manners were so gentlemanly and so kind that no one would remain offended with him. When he was on his sprees, his originality and humor made him the admiration of the vulgar; when sober, of the learned and talented. He was the first delegate sent to Congress, and his active exertions, while there, for the benefits of his constituents, gave him increased popularity on his return.

"On his way to Congress, he went through North Carolina and met a young girl whom he determined to take with him. He dressed her in boy's apparel, mounted her on a horse with his portmanteau behind her, and passed her for his body servant. Before they reached Nashville on his return, she became unable to proceed, and was delivered of a son. This son was the late Edward D. White, Esq., of Louisiana, who became governor and senator in Congress from that state, a very amiable and talented gentleman. I suspect Doctor White brought more money with him to the Cumberland country than any of the early settlers. He purchased a body of land (White Bend) of some six thousand acres included in the bend of the Cumberland River some eight miles down the river; built himself a cabin and there, with his son and girl companion, spent the remainder of the time that he lived in this country. He was liberal and free with his medical advice, but never could be prevailed on to pursue the practice of medicine as a regular avocation.

"In 1797 he sold his land to Tait and Stothart, merchants of Nashville, and removed to Louisiana with his son. He there settled in the parish of Attakapas and was

appointed parish judge. He sometime afterwards married, but had no children by his wife. He sent his son to Nashville to be educated at Cumberland College, later University of Nashville."<sup>2</sup>

The next physician who arrived in Nashville was Dr. John Sappington,<sup>3</sup> who came from Baltimore in 1786. He came out with his elder brother Mark's wife and children. Dr. Mark Sappington remained at the old home for a time to wind up his unsettled business. The following year Mark came out, but his wife had died before he reached Nashville. Dr. John Sappington remained but two or three years, removing to Louisiana, where a few years afterwards he died. Dr. Mark Sappington purchased a tract of land four miles below Nashville, at the mouth of Whites Creek, and removed to it, where he continued to reside until his death in 1802. He was well educated and was considered an able physician. He was a fine gentleman with a dignified, stately manner. He was particular in his dress; wore his hair powdered, shorts, and massive silver knee and shoe buckles. He had four sons who studied medicine with him. His elder son, Roger B., settled in Nashville and vicinity until his death in 1824. He had a large practice, being esteemed a good physician. He had a very good personal appearance, was urbane and honorable in his intercourse with his medical brethren. His son, Mark, Jr., studied medicine with him and later settled in Memphis. His brother, Frank, also settled in Nashville, but did not regularly practice medicine. He went in the capacity of surgeon in the Nickajack campaign. In 1798 he was challenged by Dr. Francis May to fight a duel. They fought in the cedars in the south field (Broad and Eighth Avenue), and he was killed by the first fire, Doctor May's ball entering his forehead.

Dr. John Sappington, the third son, settled in or near Franklin, Tennessee, and after several years moved to Missouri. He is the author of the celebrated Sappington Fever and Ague Pills.

Dr. Francis May removed from Winchester, Virginia, to Nashville in 1790. He practiced medicine here until the unfortunate occurrence of the duel with Doctor

Sappington. He then removed to Knoxville. There he married a sister of the late Hugh L. White, and returned to Nashville in 1804, where he pursued his practice of medicine until his death in 1817. Dr. Felix Robertson stated that he was personally acquainted with Doctor May and had known no man who possessed a higher sense of honor. He was a bosom friend of General Andrew Jackson, and named a son Jackson in token of this friendship. He died, leaving a widow and five children. His widow married the late Judge John Overton.

Dr. James Hennen and Dr. William Dickson came to Nashville in 1794. Doctor Hennen was a native of Ireland, and immigrated to the United States and settled near Baltimore, where he soon afterwards married. He removed to Nashville and, in conjunction with the practice of medicine, opened and kept an apothecary shop, the first one established in Nashville. Shortly afterwards he took as his partner Dr. William Dickson, and they continued for several years to attend to a large practice. Doctor Dickson then retired from the partnership and moved to the country, representing his district in Congress. He was also a member of the convention in 1796, which formed the constitution of the State of Tennessee. After he moved to the country, he would not attend exclusively to his profession. He and his wife died in February, 1816, of the epidemic pneumonia, commonly called "cold plague," which destroyed so many lives during the winter and spring of that year.

Dr. William Dickson emigrated from North Carolina. He left, at his death, two children, daughters. They were raised by their maternal relation, Colonel Edward Ward, who resided near the Hermitage. The younger daughter married Dr. Frank Stith of Williamson County.

Dr. Thomas A. Claiborne removed from the State of Virginia to Knoxville about 1797, where an elder brother, Mr. C. C. Claiborne, was living. His eldest brother married the daughter of Major W. T. Lewis of Nashville, and through that connection he became acquainted with and married to the second daughter. After a short stay in Knoxville, he removed to Nashville.



About this time, Dr. Joseph Hays removed from Abingdon, Virginia, and settled in Nashville. He entered into partnership with Doctor Claiborne in the practice of medicine and opened an apothecary shop. They had quite an extensive practice, but did not continue the apothecary shop for more than a year or two. Doctor Claiborne moved to his farm, three miles in the country, in 1808, and in the following year his wife died. He soon afterwards moved to Natchez, Mississippi.

In 1804 Dr. Thomas G. Watkins and Dr. Hanson Catlett removed from Virginia to Nashville. They entered into partnership in the practice of medicine and an apothecary shop. Doctor Watkins was considered a man of talents and had a very extensive practice, but soon became involved in litigation, which gave him much trouble, and finally caused him to leave the country about 1810. He returned to Virginia. Doctor Catlett also moved back to Virginia about the same time.

In 1804 Dr. Thomas Claiborne built the first brick office house in Nashville on the west side of Market Street (Second Avenue) just north of the Public Square, it being two rooms deep and two stories high. The front room downstairs was used as an office and the other three as his residence. This house was later used by the Nashville Relief Society.

Doctor May built his home next to that owned by Randall McGavock just north of the Bell Tavern, which was on the north side of the square. Doctor Hennen built the next brick building and occupied it as a residence, it being next to that owned by Doctor Claiborne. Dr. John Newman moved to Nashville in 1806, and built the first building on the east side of Vine Street (Seventh Avenue) between Cedar and Church Streets. Doctor Wheaton lived and owned all the property on the east side of Market Street from Church to Broad Streets.

Doctor Henning, who moved to Nashville from New Orleans, built his office and home just back of the Nashville Inn. Dr. Felix Robertson studied medicine with Doctor Henning.

Dr. John Newman, who was born in Salisbury, North Carolina, in 1770, studied medicine under Doctor Rush of Philadelphia in 1790, moved to Nashville in 1806, and started the practice of medicine in 1810. His manner was formal and stately, his temper not very amiable. He had a large practice, and it was often said "that usually to each cedar bush then on the hill near his residence (Memorial Square) was found at least one horse tied, to each of them, and every one of them had brought to him more than one patient." He was bitterly opposed to vaccination and inoculated his own son for the smallpox, greatly to the alarm and displeasure of his neighbors. At his death, his practice was taken over by Dr. James Roane, son of Governor Roane, in 1828.

In 1829 there were three Doctors Martin practicing in Nashville. When only two, they were readily distinguished by the color of their hair, but when the third came along, then came confusion, especially among the colored population. As "Black Head" and "Red Head" would no longer designate them, the program was readily changed, and the words, "Saint," "Sinner," and "Devil," were substituted. The latter was acquired by the newcomer having demanded payment for services rendered his patrons in a neighboring town after the usual year's credit. The first two bills were disputed, ending in both instances by the irate doctor giving each disputant a sound whipping. After this, the bills were all promptly paid on demand. These doctors were: Dr. Robert C. K. Martin, who practiced with his relative, Dr. John Shelby; Dr. Robert Martin, who was later physician to the School for the Blind; and Dr. "Red Head" Martin, whose wife owned and operated the Nashville Inn.

The first attempt at ovariectomy in our state was made by a distinguished and learned physician of Nashville, Dr. James Overton, who moved to Nashville in 1818 from Lexington, Kentucky, where he had filled a professional chair in old Transylvania. His enthusiasm had been greatly excited by the brilliant operations of the renowned Dudley, but more especially by the then new operations of Dr. Eph Mc-



Dowell of Danville, Kentucky, for the extirpation of enlarged ovaria. He was exceedingly anxious to obtain surgical celebrity in his new location. It was not long before an opportunity presented itself, which, in his imagination, was to immortalize him as a surgeon. He was called to a lady with an enormous abdominal tumor of eight months' standing, and, after careful examination, satisfied himself and the family of the patient that it was a case of ovarian tumor, and that nothing but slitting open the abdominal walls and removing the diseased mass offered any hope of relief; and as the lady had heard of the wonderful success of the Kentucky surgeon, she became anxious to be relieved.

Dr. William K. Bowling, in a biographical sketch of Doctor Overton, in the *Nashville Journal of Medicine and Surgery*, describes the operation and its results in his inimitable way, as follows:

"Early on a bright June day, in the year 1818, a solitary horseman might have been seen emerging from the little city in the direction of the city ferry. At Haysborough, seven miles above Nashville, long a powerful rival of 'the town below,' but long since defunct, the horseman drew up at a hotel, ordered his breakfast, and that his steed should be bated. While breakfast was being prepared, the traveler stepped across the street to a physician's office, and, finding the doctor in, introduced himself as Doctor Overton, mentioned the character of the operation he was to perform that day in the neighborhood, and politely invited the medical gentleman to be present. The invitation was cordially accepted, and after breakfast the twain proceeded to the house of the patient.

"There was a large apple orchard near the house, and to each tree a half-dozen horses were fastened, some bearing men's saddles, some women's saddles, and some, of less lofty pretensions, compromising with an untanned sheepskin, fixed to their backs by a red surcingle, while not a few were nude, save a rope halter, necessary for 'safe bind, safe find.' The medical gentlemen, dismounting, were vainly looking for a hitching post, when a laughing Negro approached in a trot and relieved them of

their charge, stating that 'white folks told him to take the doctor's horses to the stable.'

"Doctor Overton was elaborately dressed, and, along with the French language, had acquired a good deal of French politeness. The large yard in front of the dwelling was densely crowded with men, women, and children, with not a few friendly curs, who, having no affairs of their own, are always busying themselves with those of other folks. Doctor Overton uncovered, but holding his polished hat against his left shoulder with gloved hand, that all the world might bear witness that he had a hat, and made his way through the dense crowd, which instinctively shrank into smaller compass to make way for him, bowing and smiling right and left as he advanced, which salutation not being directed to anyone in particular, each threw himself on his reserved rights and returned it with a stare. Such were the shadows of coming events.

"Within sat the anxious patient, holding within her that which was destined to make her surgeon immortal. The operating table, cushioned and pillowed, and garnished with napkins and sponges and bowls of water, for the convenience of light and spectators, was placed in a large piazza, and near it a small stand sparkled and glittered with unfleshed instruments like a casket of rubies.

"The patient being placed on the table, and all things ready, the crowd gazing in agony of expectation, the surgeon selected a burnished scalpel, his hand being ungloved for the occasion, and holding it between the sun and his eye, said to his assistant, in an undertone, 'To hold it like a pen is axiomatic; it gives the digital apparatus perfect control of it. In its achievements, indeed, it may be compared to a pen. That little instrument, controlled in its movements by genius and cultivation, secures immortality.'

"An assistant being now appointed for each extremity, and the patient exhorted to be firm and courageous, the surgeon proceeded dexterously to divide the integuments from the umbilicus to the symphysis pubis. A few more strokes of the scalpel in the direction of the linea alba exposed the surface of the enormous tumor. It was

remarkably smooth and polished, and there were noticeable irregular movements in it, difficult, at first, to account for.

"'Better not go on,' said the assistant.

"The wound was closed with sutures and adhesive strips, 'and a compress and bandage completed the dressing, as surgeons say.

"About 3:00 o'clock P.M. on that same bright June day, two horsemen might have been seen treading their way, tandem, through an unbroken forest, in the direction of Haysborough. Not a word had been spoken since they mounted their horses, though several miles had been passed over. Doctor Overton was the first to break silence. 'Doctor,' said he, 'did you ever notice that everything, as well as diseases, runs in families? Now this woman's father was always being tricked, or tricking someone else. Staggering about through fields, behind his forked stick, or divining rod, looking for mineral waters, and gold and silver mines, and finding nothing but disappointment. And here is the daughter, with a stout husband, and the mother of three children, such an infernal fool as not to know that she was with child, but deliberately turning herself up to be split open in the gaze of the multitude. The whole seed, breed, and generation of them are tricksters all; and now they have played me a h—ll of a trick.'

"This unfortunate case terminated Doctor Overton's career as a medical man. 'I did not,' said he to the author, 'retire from the practice; I was victorious in defeat. The practice retired from me, and left me in triumphant possession of the field.'

"He always insisted, moreover, that his operation conferred a great boon upon science, but the medical asses of his generation were so stupid to avail themselves of it. That, before his operation, obstetricians were perplexed to determine the quantum of force yielded by the abdominal muscles in the parturient effort. 'Now, said he, 'my patient was delivered of a healthy, living child, a few days later after the operation, by uterine effort alone, for as to the abdominal muscles in that case, it is very clear that I had fixed them for slow traveling.'"<sup>4</sup>

Dr. Boyd McNairy was born in Nashville

and began the practice of medicine here in the early part of 1815. His office at that time was in the brick house formerly owned by Robert Stothart. He graduated at the University of Pennsylvania, and continued his practice here until his death in 1859.

Dr. John Shelby was a native of Sumner County, Tennessee, born May 26, 1786. He graduated from the University of Pennsylvania. In 1813 he joined the army as surgeon, and served under General Jackson in the Creek War. During the war, he was severely wounded and lost an eye. Shelby Medical College was named in his honor. He died in Nashville, May 15, 1859. Dr. Boyd McNairy and Dr. John Shelby formed a partnership in the practice of medicine.

Dr. Samuel Hogg commenced the practice of medicine in Nashville about the first of June, 1819. He was born in Caswell County, North Carolina, April 18, 1783. When he finished his medical education, he came to Tennessee and settled first at a small village on the Cumberland, then went to Lebanon; and, in 1812, accepted the position as surgeon to a regiment and was at the battle of New Orleans, January 8, 1815. He died with pulmonary tuberculosis May 28, 1842.

On the twenty-fifth of April, 1821, Dr. James Overton removed three stones from the bladder of a son of Mr. Condon of Nashville, which was considered a remarkable operation at that time. On May 15 of the same year, Dr. Felix Robertson performed the operation of removing a stone from the bladder of Mr. Roland, who was twenty years of age. The stone was three and one-half inches in the largest circumference and weighed one-half an ounce.

During these days, a young doctor started with his saddlebags filled with the vilest-tasting drugs, such as rhubarb, aloes, and even a package of Peruvian bark, with which to make a decoction to stop chills; calomel to salivate his patients, if first bleeding, puking, and purging did not cure or kill him. As to the surgical instruments, instead of improved tooth forceps, an instrument shaped like a key with a hook attached, either to twist out or wrench the jaw, a gum lancet, and a dull knife or two which were sharpened on the doctor's boot



before use. With this outfit, a horse, bridle, and saddle, the young doctor awaited his first call. At that time a diploma from some medical college meant something, as most of the practitioners had either read "Gunn's Domestic Medicine" or attended one course of lectures, and learned to believe in an erroneous idea that a bandage to a fractured limb could never be too tight. Surgery was practiced under difficulties, anesthesia being unknown until the decade of the fifties and antiseptics not until years later.

The men who received the degree of medicine, limited though their medical education was in comparison with present-day standards, constituted the small minority of the medical profession in this area. It was unquestionably true that a large portion of those who practiced in Nashville were not graduates of any medical college. As early as 1817 an attempt was made to secure enactment of a law for the regulation of the practice of medicine, but the attempt failed, and it was not until 1889 that licenses were required of those who practiced in the state.

On March 5, 1821,<sup>5</sup> at a meeting of the following physicians, Dr. James Overton, Dr. Felix Robertson, Dr. John Waters, Dr. Boyd McNairy, Dr. R. A. Higginbotham, Dr. A. G. Goodlett, and Dr. James Roane, for the purpose of forming a society to be called the Medical Society of Nashville, and for the purpose of considering the fees which they would charge for medical services, it was agreed, after Dr. Felix Robertson was placed in the chair and Doctor Roane made secretary, as follows:

For visit in town.....	\$ 1.00
For riding in country, per mile.....	1.00
For any visit out of town, not less than visit	2.00
For bleeding.....	1.00
For extracting tooth.....	1.00
Cathartics and emetics, each.....	.50
For pills, half dozen.....	1.00
For obstetrical case.....	20.00
For gonorrhea case.....	10.00
For L. V.....	20.00
For powders, per dozen.....	1.50
Consultation .....	5.00
Prescription at shop.....	1.00
Amputation of thigh, leg, and arm, each....	50.00
Vaccination .....	2.00
Trepanning .....	50.00
For visit at night, after going to bed.....	5.00

Night visit, double price of day.....	\$ 2.00
Cupping .....	2.00
Blister .....	1.00
Arteriotomy .....	2.00

"We, the undersigned members, agree that we will not charge less for the above enumerated services than the several prices affixed to them above, and to this effect mutually pledge ourselves each to the other under the sanction of a solemn pledge and promise.

"FELIX ROBERTSON, *President*;

"JAMES ROANE, *Secretary*;

"JOHN WATERS,

"BOYD MCNAIRY,

"R. A. HIGGINBOTHAM,

"A. G. GOODLETT,

"JAMES OVERTON."

This society was the beginning of organized medicine in the city of Nashville and the beginning of the present Academy of Medicine and Davidson County Medical Society, although the original name of the society changed several times. The meetings were held in the log courthouse on the Public Square. In 1826, the name was changed to the Nashville Medical Society.

Dr. J. O. Ewing began the practice of medicine in Nashville in 1823 and formed a partnership with Dr. A. G. Ewing. Doctor Hays, in September, resumed the practice of medicine relating to midwifery in order to rescue it from the hands of the ignorant and presumptuous. Doctor Yandell commenced the practice of medicine in 1830. Doctor Esselman started the practice of medicine in April, 1833, having his office with Dr. James Roane. Dr. J. R. Putnam entered the field at the same time. Dr. M. Atchison and Dr. J. M. Cantrell started in October, 1831, and had their offices with Dr. Boyd McNairy. Dr. Wm. B. Dorris offered his professional services to the public in May, 1832, as also did Dr. Syd Smith. In 1833 Doctor Becton was in partnership with Doctor McNairy. In 1825 Dr. John Lawrence came to Nashville and built a house on the corner of Broad and Walnut Streets. He married Miss Rachel Jackson, the daughter of Andrew Jackson's adopted son.

The first operation of ovariectomy performed in Tennessee was done by Dr. E. McDowell himself in 1832 on the person of



Mrs. Overton (a relative of the doctor), whose husband resided near the Hermitage. A fee of five hundred dollars was charged for the operation, but fifteen hundred dollars was paid the surgeon by Mr. Overton. The next ovariectomy was done by Dr. W. T. Briggs on a Negro woman belonging to Mr. Ratcliffe of Nashville in the fall of 1857.

Dr. Chas. K. Winston, a native of Kentucky, moved to Nashville in 1842. He filled the chair of materia medica in the University of Nashville, and died in 1876.

Dr. Thomas Reid Jennings was the son of Obadiah Jennings, the pastor of the First Presbyterian Church, graduated from University of Pennsylvania, and began his practice in 1835. He was the professor of physiology and anatomy in the University of Nashville.

The *Nashville Whig* of November 12, 1828, mentions the Nashville Medical Society as meeting in the log courthouse on the Public Square with the following members present: Drs. Felix Robertson, James Roane, Samuel Hogg, Boyd McNairy, James Overton, Charles Pugsley, John Waters, John Maxey, John Lawrence, David McGavock, Thomas Claiborne, Roger Sappington, Frank Stith, R. C. K. Martin, Robert Martin, "Red Head" Martin, and John Shelby.

In 1830 Dr. James Roane was elected the first president of the Medical Society of Tennessee following the meeting of the Nashville Medical Society, which fostered his candidacy for that position. The meeting of the state society was held in the rooms of the Nashville Medical Society, and at this same meeting the quarrel between Doctor Hogg and Doctor Pugsley was aired before the Nashville Medical Society; charges and countercharges of intrusion on the other's practice, of extortionate charges for medical services and nocturnal attack on Doctor Pugsley by Doctor Walker, who was Doctor Pugsley's partner, throw light on some of the medical practice of that day.

In 1829 Dr. John Robertson Wilson performed an operation upon a colored man, the operation being "Ileus attended with intussusception," an operation at that time unknown in surgery, this doctor being the

grandfather of Drs. Owen Wilson and Al Harris of Nashville.

During the year of 1832, cholera first visited Nashville, and during the winter and spring of 1833, there were 173 deaths from this disease, among whom was Dr. James Roane, the first president of the state medical society. In the first volume of the *Nashville Journal of Medicine and Surgery*, in the April number, page 126, Dr. W. K. Bowling states that from the ninth of June, 1850, until the first of August, it is probable five hundred persons perished in the city of Nashville and suburbs from cholera. And during the progress of the epidemic, a large majority of the physicians were agreed as to the following facts:

First—That the disease was worst in those districts where the population used spring or well water.

Second—That it was most fatal among those who were not acclimated.

Third—That those who ate and drank, as they always had, during the epidemic, when assailed, almost invariably died.

Fourth—The abstemious and prudent, when assailed, recovered.

Fifth—Those who relied on patent and other cholera nostrums died.

Sixth—Those who kept such prescriptions by them as experience here had demonstrated most effective, and took them instantly upon seizure, recovered.

Seventh—Small doses of mercury and large doses of opium combined proved the surest method of arresting the disease.

"We do not regard fruit and vegetables an exciting cause of cholera, but if the ship be overtaken by the storm of cholera, while laden with vegetables or fruit, it sinks. Neither in 1850 nor in 1854 have we found a single instance in which a non-vegetable and non-fruit eater died of cholera."

Very little information is available for the next few years, but the Nashville Medical Society was functioning, for in the *Nashville Republican* for January, 1844, there was an announcement that Dr. Charles K. Winston had been elected president of the Nashville Medical Society, and also in the years of 1850 and 1853 the announcement appeared that John McClaren Walsh, M.D., and Wm. K. Bowling,

M.D., were respectfully appointed president of the society. In 1858, at a regular meeting on the ninth of June, the constitution was amended, and the society was formally organized under the name of the Nashville Medical Society, although it had been called such since 1828. Dr. A. H. Buchanan was elected president; Dr. S. S. Mayfield, vice-president; and Dr. George S. Blackie, secretary and treasurer at this meeting.

At the meeting January 5, 1859, Doctors Robertson, Overton, and Shelby were elected honorary members of the society, being three of the fathers of the profession in Nashville.

In 1859 Dr. W. H. Buchanan, a very prominent surgeon of that day, performed the operation of amputation at the hip joint upon a fourteen-year-old boy with success. This seems to be the first operation of its kind in Tennessee.

In the June meeting of 1860, due to the number of members of the society entering military service, the Nashville Medical Society was adjourned until a future date.

There were no meetings during the Civil War, but on August 16, 1865, in a call meeting by the secretary, Dr. George S. Blackie of the Nashville Medical Society, a meeting was held at the offices of Doctors Bowling and Cheatham for the reorganization of the society, which had been adjourned by the Civil War. Dr. C. K. Winston was elected president, and Dr. George S. Blackie, secretary pro tem. Roll of members arranged by seniority on August 19, 1865:

Dr. W. K. Bowling	Dr. W. B. Maney
Dr. G. S. Blackie	Dr. John M. Morgan
Dr. C. K. Winston	Dr. D. Dupre
Dr. P. S. Woodward	Dr. J. H. Oney
Dr. A. A. Hatcher	Dr. S. L. Wharton
Dr. John Callender	Dr. W. H. Morgan
Dr. J. D. Winston	Dr. V. S. Lindsley
Dr. W. L. Nichol	Dr. F. M. Hughes
Dr. C. A. Pyles	Dr. T. Menees
Dr. D. J. Roberts	Dr. J. A. Beauchamps
Dr. J. R. Harwell	Dr. G. H. Lenoir
Dr. W. A. Cheatham	Dr. J. C. Denton
Dr. P. F. Eve	Dr. J. Mont Baxter
Dr. W. T. Briggs	Dr. E. W. Thurm
Dr. J. R. Buist	Dr. W. D. Horton
Dr. C. A. Brodie	Dr. J. D. Skeer
Dr. R. Martin	Dr. C. W. Harper
Dr. T. L. Maddin	Dr. E. H. Lewis

Dr. John C. Newman      Dr. T. B. Buchanan  
Dr. John W. Morton      Dr. J. Cornwell  
Dr. H. M. Compton

On January 3, 1866, on the motion of Doctors Eve and Newman, the "fee bill" agreed on by the physicians of the city some years previously was adopted by the society, and copies mailed to all physicians, and it was resolved that the future meetings be held in the hall of the board of health on the corner of Cherry and Union Streets, upstairs, instead of different offices.

In 1867 Dr. Thomas L. Menees was elected president, Dr. G. S. Blackie, secretary and treasurer.

In 1868 Dr. John D. Winston, president; Dr. G. S. Blackie, secretary and treasurer.

In 1869 Dr. J. Berrien Lindsley, president; Dr. G. S. Blackie, secretary and treasurer.

In 1872 there was a medical society organized in Edgefield, under the name of the Edgefield Medical Society, with Dr. George R. Williamson president and Doctor Loftin, secretary and treasurer. The society had fifteen members who lived outside of the city of Nashville. This society, I am of the opinion, was the beginning of what was later the Davidson County Medical Society. In 1872, Dr. S. S. Mayfield was president of the Nashville Medical Society.

There appeared in the *Nashville Republican* on September 12, 1873, an announcement that the Nashville Medical Society and the Edgefield Medical Society met nightly in the city hall jointly from June 7 to September 10 to discuss and to advise the city government what steps to take and formulate plans to control the epidemic of cholera that was rampant in the city at that time.

In 1876 Dr. Van S. Lindsley was president of the Nashville Medical Society, and in 1877 Dr. James D. Plunkett was president.

In 1879 there occurred on the floor of the Nashville Medical Society a dispute on the election of delegates to the state convention, and some of the members resigned from the society and organized another society, which was called the Davidson County Medical Society, this society absorbing the Edgefield Medical Society.

There is some difference of opinion as to whether the Nashville Medical Society was discontinued prior to 1886 or whether in April, 1886, the Nashville Academy of Medicine and Surgery that was organized on that date absorbed the name of the Nashville Medical Society and its members. But on this date the new society was formed and took the name, The Nashville Academy of Medicine and Surgery, with about thirty members present. Dr. J. W. Maddin, Sr., was the first president, Dr. N. D. Richardson, vice-president, and Dr. J. W. McAlister, secretary and treasurer. Since this organization the officers have been as follows:

Presidents—Dr. T. A. Atchison, Dr. W. A. Atchison, Dr. J. S. Cain, Dr. J. B. Stephens, Dr. N. G. Tucker.

Vice-presidents—Dr. W. D. Haggard, Sr., Dr. C. W. Winn, Dr. G. C. Savage.

Secretary and treasurer—Dr. J. W. McAlister, Dr. J. L. Watkins, Dr. R. O. Tucker, Dr. George W. Price.

The academy met every second and fourth Thursday in the month, and at each meeting cases were reported, an essay was read, upon which a discussion followed on some

general topic. Cigarette smoking has been discussed, and later the subject of wearing mourning for the dead was taken up.

During the year of 1890, the academy was at a low ebb, only five or six members attended meetings which were held in the Odd Fellows Hall. The academy was held together at this time by the faithful work of the following members: Drs. J. Bunyan Stephens, James Ballam Stephens, Owen Wilson, Douglass, Buist, Cain, Haggard, Tucker, Wood, Savage, Price, Crawford, and Handly. This period lasted for three years, and in 1893 there was a union of the Nashville Academy of Medicine and Surgery and the Davidson County Medical Society. Following this union, the joint society began to grow and take on new life and has since grown into our medical society.

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2. "Presidential Address by Dr. Felix Robertson." *The Nashville Journal of Medicine and Surgery*, 1855, Vol. 8, No. 6, p. 441.
3. Crew: "History of Nashville," 1890.
4. *Nashville Journal of Medicine and Surgery*, second series, Vol. 2, April, 1873.
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## NATIONAL RESEARCH COUNCIL

*To the Physicians of the United States:*

Dear Doctor:

We seek your active assistance to improve the quality of American diets. Many men, women, and particularly children, either because of lack of funds or of adequate advice, are not getting the food they need to maintain them in good health. The scientific knowledge of nutrition now at hand has not been applied to best advantage for the benefit of the national health.

### THE NATIONAL RESEARCH COUNCIL

In compliance with a request of the government, the National Research Council established a committee to provide scientific guidance for a campaign to improve human nutrition. The National Research Council was organized within the National Academy of Sciences, at the time of the World War, by an executive order of President Wilson. It assisted in the prosecution of that war and, after the war, continued to serve as an advisory agency of the government. The thirty-three members of its Committee on Food and Nutrition were selected by the executive officers of the council from among the leading exponents of the science of nutrition. The membership includes ten physicians, five physiologists, eight chemists, six nutritionists, and representatives, two each of agriculture and food technology. This committee merits your confidence; six of its members also are members of the Council on Foods and Nutrition of the American Medical Association.

### RECOMMENDATIONS

Following are the actions taken by the Committee on Food and Nutrition:

*Improvement of Flour and Bread.*—A procedure to improve the nutritive quality of flour and bread: For the time being synthetic vitamins are utilized to restore essential substances to white flour and bread. Thiamine, nicotinic acid or nicotinic acid amide, and the mineral iron are the substances now being added. Ultimately processes of milling may be developed which will preserve the vitamins and minerals originally in the wheat in a flour acceptable to consumers. The purpose of this recom-

mendation is to insure *immediately* a supply of these vitamins of the vitamin B complex (thiamine and nicotinic acid) which are essential for the satisfactory oxidation of carbohydrate foods. The required levels for these vitamins, as well as for iron, will approximate those found in whole-wheat flour and bread. (Many millers and bakers have made such products available under the designations "enriched" flour and "enriched" bread. Regulations for their control will soon be promulgated by the Food and Drug Administration through the Federal Security Agency.)

*Use of Iodized Salt.*—The widespread use of table salt iodized to a standard level of one part of potassium iodide or equivalent per 10,000 parts of salt is recommended. (Iodized salt has been available for many years, but its use of late has unfortunately declined; the incidence of endemic goiter is on the increase. Conclusive evidence confirms that harm does not attend the use of iodized salt by persons otherwise receiving an adequate supply of iodine.)

*Addition of Vitamin A to Oleomargarine.*—A recommendation has been adopted to promote the general fortification of oleomargarine with vitamin A to a level of 9,000 international units per pound. (Such oleomargarine is now replacing unfortified oleomargarine.)

### SUMMARY

The committee believes that use of whole-wheat bread and of butter should be encouraged by vigorous educational effort. Where these natural foods are not used, enriched flour and bread and properly fortified oleomargarine should be preferred over unenriched white flour and bread and oleomargarine not containing vitamin A. Use of iodized salt is also to be emphasized. These nutritionally-improved products will greatly facilitate the planning of satisfactory diets.

These recommendations have the endorsement of the Council on Foods and Nutrition and of the Board of Trustees of the American Medical Association. Your personal endorsement of them will help more. Strong leadership in the campaign for im-

proved nutrition must come from physicians; your active support of the nutritional activities of your community is essential.

Acceptance and application of the recommendations of the National Nutrition Conference and of the actions of the Committee on Food and Nutrition by all the people is required. If our great nation is to preserve its heritage, Americans must have a diet that more nearly meets the recommended dietary allowances advocated by the National Nutrition Conference. (See

*Journal of the American Medical Association*, June 7, 1941.) Nutritious food may well determine the effectiveness of the national defense. The people must understand; they look to you for guidance.

RUSSELL M. WILDER, M.D.,  
*Chairman, Committee on Food and Nutrition, National Research Council.*

JAMES S. MCLESTER, M.D.,  
*Chairman, Council on Foods and Nutrition, American Medical Association.*

# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of  
Tennessee

Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1941

## THE ISSUE

SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

## EDITORIAL

### Christmas Greeting

We at the headquarters office have chosen this method of expressing Christmas greetings and good wishes to all who receive the JOURNAL.

Those of us who work at the job of getting out the publication have developed an interest in our readers, and we want this issue to bear to you this expression of our good will.

### YOUR JOURNAL

The thirty-fourth volume of THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION is completed with this issue. This volume will contain fifty-one scientific articles by sixty authors. These articles

embrace a wide variety of subjects of current interest to the practitioners of medicine.

Your JOURNAL then is of scientific interest and importance.

The volume will contain a large number of editorials on a wide variety of subjects. It contains news notes and comments of interest to a large portion of the membership. It contains statements of the activities of medical societies. It contains abstracts of a large number of scientific articles gleaned from the wide field of medical literature. It contains advertising of a standard character. The advertising that is accepted is by ethical houses who make statements of their products which are approved by the Council on Pharmacy and Chemistry of the American Medical Association. These advertisers pay for the privilege of telling you of their products in the columns of your JOURNAL. They are entitled to your support.

Your JOURNAL goes to all the other states in the Union and to many libraries in the United States and foreign countries.

An author some days ago said he had received more requests for reprints of an article published in THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION than he had ever had from any article published in any medical publication. He has published several articles in national magazines.

The August issue of this volume contains the proceedings of the House of Delegates of the Tennessee State Medical Association. A perusal of that volume will give the membership a fine idea of how your officers and leaders are trying to serve you and, in addition, will give an idea of the many problems that are presented from time to time.

This is an appeal to the membership to read the JOURNAL—read something in all of its various departments.

This JOURNAL, of course, is an organization publication, or what may be termed a house organ. It is not a purely scientific publication and should not be.

Finally, the JOURNAL contains notices of the death of members, and in many instances statements of actions taken by fel-



lows left behind. These notices are altogether too numerous.

It should help you then to read the *JOURNAL* in spite of the compelling interest which attaches to the flaming headlines which appear every day in the paper.

#### A SALUTE TO NORWAY

The following editorial was found in the *New York State Journal of Medicine*. It is believed that this editorial will be of interest and value to our readers:

One ponders at times the fate of the medical profession in the occupied countries of Europe. Out of the dark agony that seems to envelop France, Belgium, Holland, Norway, Poland, and the rest comes no word, no picture of what is happening to the members of the medical profession or any inkling of how they are meeting the ordeal of their captivity, their sojourn in the house of bondage.

The newspaper *PM* for September 25, 1941, carried a special article by Albert Deutsch<sup>1</sup> which permits a brief glimpse of the Norwegian medical profession under circumstances of great difficulty. From this we quote:

"Several years ago the eminent Norwegian psychiatrist, Dr. Johann Scharfenberg, wrote a scholarly paper on the personality of Adolf Hitler, concluding that the fuehrer was a madman. Soon after the Nazis occupied Norway, gestapo agents entered Doctor Scharfenberg's home and asked him point-blank if he still held the same opinion.

" 'My opinion has changed in one respect,' Doctor Scharfenberg replied. 'When I wrote my article I believed Hitler was insane. Now I *know* it.'

" 'Don't you realize your remark is highly dangerous?' asked the gestapo men.

" 'Of course,' he replied. 'But I am an old man, you see. My work is about finished. Now you can do what you like with me. It doesn't matter.'

"The Nazis spluttered that Doctor Scharfenberg would have to report at the local Quisling police station each day.

" 'Too much trouble,' said the grand old man. 'Here's my phone number. You can call me daily if you wish.'

"They threw Doctor Scharfenberg into prison. Every day the good people of Oslo sent many baskets of flowers and food to his cell. It all got too embarrassing for the Quislings, who released the old psychiatrist after six weeks."

*PM's* staff writer says that he obtained his information by piecing together reports from abroad and from firsthand accounts from recently arrived medical refugees from Norway.

"The Dikemark Insane Asylum, near Oslo, is the largest institution of its kind in Norway. Last spring its medical director, Dr. Rolv Gjessing, received a notice from the new Nazi surgeon general, Doctor Ostrem, ordering him to promote a certain orderly to superintendent of male nurses. Doctor Gjessing refused, knowing that the man's only qualification for the job was being a loyal Nazi. After repeated threats failed, the Quisling administration dismissed and imprisoned Doctor Gjessing.

"This outrage was followed by one of the most remarkable acts in medical history. The heads of all medical institutions in Oslo signed a manifesto to the Quisling régime declaring their opposition to appointments made on the basis of political allegiance, demanding the immediate release and reinstatement of their colleague, and threatening a strike of the entire medical body of Oslo—more than 2,000 strong—unless their demands were granted.

"The Nazis threatened to throw every signer into a concentration camp, but the medical ranks held and in a few weeks Doctor Gjessing was reinstated as director of Dikemark.

"The Norwegian medical profession has repeatedly joined with organized labor and other groups in bold protests against Nazi tyranny. One such protest, addressed to the Nazi reichscommissar, Josef Terboven, denounced the brutality of storm troopers and mass imprisonments of Norwegian democrats. It was signed by forty-three organizations, representing all sections of the people, including the Norwegian Medi-

<sup>1</sup>Norwegian Doctors "Refuse to Swallow Nazi Medicine." Excerpts from the newspaper *PM*, Inc. Reprinted by special permission.

cal Association and the national societies of nurses, dentists, and pharmacists.

"The Nazis and their Quisling henchmen have failed time and again to coordinate the Norwegian medical profession. At first they tried to bribe their way into control of the Norwegian Medical Association. This attempt soon proved unsuccessful, and the Quislings then set up, in opposition to the Norwegian Medical Association, a national guild that lumped together physicians with natural healers and other quacks of the Julius Streicher type.

"Only fifteen or twenty doctors entered the Nazi medical guild. When the names of these medical Quislings were made public, most found themselves without patients and several were compelled to attach placards to their shingles repudiating any connection with the new guild.

"In a short time the Nazi guild fell apart and the Quisling régime then took over the Norwegian Medical Association by decree. The existing head, Dr. Jorgen J. Berner, was kicked out and replaced by one Doctor Wagner, a Nazi sympathizer.

"So now the Norwegian Medical Association, along with nearly all other labor and professional groups, is in the hands of the Nazis. But it is an empty shell, a virtually memberless society, over which the mediocre Doctor Wagner presides. The reputable physicians of Norway have suddenly found it undesirable to continue active membership."

If but a part of this report were subsequently confirmed, *PM* has done the medical profession everywhere a commendable service by publishing it. Doubtless, were the facts obtainable, a similar story could be written of the profession in other conquered countries.

We are particularly interested in the repeated Nazi attempts and their failure to "coordinate" the Norwegian doctors. If the New Zealand confreres are of similar rugged material, the plan of the Ministry of Health of that island to "coordinate" the profession into its pet scheme of free doctor care should not fare too well in practice.

We assume that in any real test the American profession of medicine would be

just as insusceptible of coercion as the Norwegian profession, which we salute.

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#### PLAIN WORDS ABOUT VENEREAL DISEASE

*The Journal of the American Medical Association* for November 29, 1941, contains an editorial under the above caption which everyone should read.

The editorial was inspired by an article written by Dr. Paul de Kruif about a book written by Drs. Thomas Parran and R. A. Vonderlehr.

The editorial gives an accurate idea of how far wrong doctors can go when they become propagandists instead of scientists and executives.

The thing we need most right now is sound judgment and common sense in executives of the government.

While on the subject of venereal disease, it might be mentioned that, in the experience of the author, there are relatively few people who are unaware of how venereal diseases are contracted and a relatively small number of people suffering from venereal disease are at any loss whatsoever as to how they got it. Ignorance then does not explain the incidence of this disease.

Certainly there are practical, sensible things which may be done to suppress venereal diseases, but certainly propaganda will not do it, and the appropriation of large sums of money to be spent by propagandists will not achieve a result commensurate with the amount expended.

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#### COMMUNICATION FROM THE NATIONAL RESEARCH COUNCIL

On another page of this issue will be found a communication from the National Research Council addressed "to the physicians of the United States" on the subject of food, with particular reference to vitamins.

So much has been said and written on the subject of vitamins of late that a state of confusion has been brought about.

This communication is signed by Dr. Russell M. Wilder and Dr. James S. McLester, two authorities in the field of nutrition.



## CONCERNING THE REJECTED DRAFTEES

The following statement is from an editorial which appeared in the *Woman's Home Companion*, 68: No. 11, 2 (November), 1941:

## ONE MORE RUMOR SCOTCHED

"Do not believe all you hear about the bad health of American youth as revealed by the medical examinations for the Army. For the stories conflict and most of them are not true except for one group of some small area. Such wild reports, as that forty per cent are rejected for malnutrition, or that eighty per cent fail in vision tests, have led us to go to some pains to get official figures. They show the following:

"It is estimated that forty-five per cent of those examined are classed as 'unavailable for general military service.'

"The major cause of rejection is dental defects, found in 18.7 per cent of those rejected. This means that just under 8.5 per cent of all those men examined have bad teeth—and no physical trouble shows any higher percentage.

"The next greatest cause of rejection is eye abnormality—11.1 per cent, or about five per cent of all those examined.

"Next in order come musculoskeletal defects, then mental and nervous diseases. Flat feet, about which you hear a lot, cannot be very prevalent, for of all the men examined less than 1.5 per cent have feet defective in any way.

"So there seems to be little reason to worry about the general physical condition of our young men. Let us devote ourselves to the state of the nation instead."

Another statement is by Dr. S. S. Goldwater, as follows:

"It has become the fashion, on the basis of carelessly-compiled statistics of physical defects, to picture the United States as a decrepit nation. We are told that we are a toothless, almost sightless people; that we have flat feet, flabby muscles, and weak minds. We are assured that we are undernourished, that our vital organs are degenerating, that we are no match for the germs of disease that are within us and all about us.

"I refuse to subscribe to this doctrine of despair; it is a doctrine founded on half-truths. Liabilities are listed, assets con-

cealed. It is true that physical defects are common among us, but many of the defects that are used in the compilation of alarmist statistics are minor defects. It is true that we are not physically perfect, but it is equally true—and it is a cause for gratitude and pride—that America enjoys a higher level of health than any other nation in the world. Our well-being is in part due to our well-equipped hospitals and their trained personnel."

It is encouraging to see that some laymen and some lay publications are beginning to recognize the fact that the campaign of fright which has been conducted may have been inspired for a purpose.

There are social welfare workers who are genuinely devoted to the cause of human welfare and who express their devotion in terms of sacrifice. There are also those, all too numerous, who obtain good jobs, or high positions of authority in connection with the administration of welfare movements, whose principal interest is the job they hold and the authority they exercise. There are still others who see *virtue in a radical change in our way of life*.

It is becoming increasingly necessary that a careful distinction be drawn between the groups who show interest in one way or another for one reason or another in so-called welfare movements.

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 THE POSITION OF THE HOSPITAL IN THE SETUP FOR MEDICAL CARE

Many doctors have made the observation that hospitals in some communities are making a strenuous effort to assume a dominant position in the whole medical care picture. An editorial which recently appeared in the *Journal of the Michigan Medical Society* expresses one point of view on this subject. It is as follows:

## THE DOCTOR COMES SECOND

"Hospitals are provided for the sick and their doctors, not the sick and the doctors for the hospital." With these words Miles Atkinson, in the *Atlantic Monthly*, summarizes the oft-forgotten fundamental reason for the maintenance of a hospital. In this piercing exposé of professional relationship the major contention presented is



the relationship of the patient to the hospital, which justly is the primary consideration.

Mr. Atkinson criticizes the inefficiencies of the hospital, particularly in a financial manner, and then condemns the hospital's habit of charging for the physician's service which is given free. Generally the larger the city and the larger the hospital the more abuse to the physician exists.

### *Your Birthright for a Mess of Pottage*

It is of interest to the profession to determine what steps the physician may take to free himself from the bondage of certain hospital administrators. A part of the "mess of pottage" is the closed staff. Unquestionably the doctor frequently has sold his "birthright" of independence in the establishment of the closed staff, for he has made his position on the staff more important (in his own eyes, at least) than his interprofessional cooperation, which should have been guaranteed by virtue of his medical training.

All have seen the beginning and the end of the enmeshing of the doctors into the web of hospital domination. The young man enters the staff in order that he may have the association with medical leaders of his community and, in the larger centers, the postgraduate experience in the free and part-pay clinics. He sees some of his elders and teachers who may wield more or less dictatorial powers in hospital relationships, oftentimes to the absurdity of having included upon every scientific paper produced in that particular hospital or clinic the name of this "Little Caesar." What a cheap way to achieve professional recognition!

The sacrificing doctor after a year or more becomes promoted with a high-sounding title and the privilege of doing more free work and contributing more time. And as he gives more time and becomes more involved in this web he realizes that he has sacrificed his independence; he is now definitely associated in his colleagues' and patients' minds as an "X" hospital man and he fears the consequence should he rebel against a superintendent's vagary since the staff man well knows there are many others who are just waiting to step into his position of honor and travail, willing to go sled

length to attain this position. The story is an old one.

The trustees of Hospital A are told that the staff men of their hospital are serving five thousand patients a year in their clinics while Hospital B is serving only three thousand. Tycoon A, who is chairman of the Board of Hospital A, twits his business competitor B, chairman of the Board of Hospital B, who comes raving and ranting into the next board meeting demanding that Hospital B must next year have seven thousand in its clinics. The word goes to the superintendent and then to the chief of staff and then down. Occasionally even paid advertising is used to fill up vacant clinics.

The medical director of one prominent part-pay clinic maintains a standard fee of twenty-five dollars for consultation in his private practice. On his staff are some hundred capable specialists whose established fees are from five to twenty dollars, but when a patient of the director cannot afford to pay the twenty-five-dollar fee which is exacted by him he refers the patient directly to his clinic in which his colleagues donate their services and the patient is charged fifty cents or one dollar.

Abuses like this could be cited ad infinitum, but what is the solution? There is only one solution, and that is organized medicine. This organization must be strongest in its smallest unit—the county medical society. If the county medical society is the basic power of the profession in the district and if one's main medical attachments are founded on that society, the physician will not be exploited either by the hospital or by any other development. It is almost axiomatic that the stronger the local medical organization the more satisfactory the standards and the conditions of practice in that county and this is true in the largest and the smallest societies.

The term "member of the county medical society" should mean more than membership on the staff of any hospital, and when it does the private practice of medicine will be assured for all.

### REFERENCE

Miles Atkinson: "The Patient Comes First." *Atlantic Monthly*, August, 1941.

**\*MEDICAL RESERVE OFFICERS FROM TENNESSEE ON ACTIVE DUTY WITH THE ARMY AND NAVY**

James B. Witherington-----Millington  
Ray W. Mettetal-----Johnson City

**ORDERS REVOKED**

Carl N. Gessler-----McMinnville  
Harry H. Hudson-----Cleveland

*\*Based on information published in The Journal of the American Medical Association.*

## DEATHS

### DR. LUTHER CURTIS OGLE

Dr. Luther Curtis Ogle, Etowah; Lincoln Memorial University Medical Department, Knoxville, 1913; aged fifty-two; died November 9, 1941, from injuries received in an automobile accident.

### DR. ADAM G. NICHOL

Dr. Adam G. Nichol, Nashville; University of Nashville Medical Department, Nashville, 1898; aged sixty-five; died suddenly on November 14, 1941.

### DR. A. W. HARRIS

Dr. A. W. Harris, Nashville; Vanderbilt University, School of Medicine, Nashville, 1901; age sixty-three; died December 7, 1941.

## RESOLUTIONS

### RESOLUTION AND TRIBUTE TO DR. LUTHER CURTIS OGLE

On November 9, 1941, the medical profession of McMinn County and the surrounding territory was shocked by the sudden death of Dr. Luther Curtis Ogle of Etowah, Tennessee.

Doctor Ogle was born and educated in Knoxville. He graduated from the University of Tennessee, after which he practiced medicine in Etowah, Tennessee, for twenty-nine years.

Doctor Ogle has laid down a noble work and quietly passed into another field, where there is no pain, no sickness, and no sorrow,

but a beautiful rest. He loved his God, he loved his home, and he loved his noble profession, and also he loved his patients and the people loved him because of his unselfish loyalty to his patients—rich or poor.

No one can know how much he will be missed by his devoted family; for to his wife and children he was all a husband and father could be.

Now, *whereas*, Almighty God in his infinite wisdom has removed Doctor Ogle from the sphere of his earthly activities, we bow submissively to the divine hand of Him that doeth all things well and shall abide firmly in the belief that he has been called from a life of sacrificial service to one of eternal peace and rest.

*Whereas*, the McMinn County Medical Society is grieved and deplores the passing of this good man and associate member.

Now, *therefore*, we, the committee of the McMinn County Medical Society, do hereby express on behalf of said society its sense of personal and public loss in the death of Doctor Ogle, and do hereby respectfully request that these resolutions be spread upon the records of McMinn County Medical Society, and that a copy be mailed to the family of the deceased as an expression of our sympathy with them in this time of sorrow, and also that a copy be mailed to the Tennessee State Medical Association, and that a copy be sent to the county paper.

(Signed)

McMINN COUNTY MEDICAL ASSOCIATION.

Written by:

JAMES R. NANKIVELL, M.D.

D. PARIS BRENDLE, M.D.

### DR. W. F. ROBERTS

Submitting with grieved hearts and bowed heads to the ways of Providence in the passing of a faithful and distinguished member, the undersigned, acting officially for the Obion County Medical Association, tender these resolutions of our deepest concern and sympathy to his bereaved companion and numberless friends.

OBION COUNTY MEDICAL SOCIETY.

*Resolution Committee:*

J. D. CARLTON, M.D., *Chairman.*



## NEWS NOTES AND COMMENTS

### CHANGE OF ADDRESS

Washington County—T. P. Day, Johnson City, to Knoxville, Tennessee.

Davidson County—Felix A. Hughes, Jr., Nashville, to Health Office, 104 Courthouse, Memphis, Tennessee.

Dr. Joseph T. Marshall, formerly connected with the Hamilton County Health Department, Chattanooga, left on December 1 for Great Britain to work with the Emergency Medical Service of the British Red Cross for at least one year.

### UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed \$500" for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

Essays shall be in the hands of the secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Connecticut, on or before April 1, 1942.

Five postgraduate courses in obstetrics, each of four weeks' duration, will be offered at the Chicago Lying-in Hospital between January 12 and June 6, 1942. These are sponsored by the Illinois State Department of Health and the Children's Bureau of the United States Department of Labor.

Additional information and application blanks may be obtained by request from Postgraduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Avenue, Chicago, Illinois.

## FOURTH ANNUAL CONGRESS ON INDUSTRIAL HEALTH

Arrangements have been largely completed for the fourth annual Congress on Industrial Health sponsored by the American Medical Association, which will be held Monday and Tuesday, January 12 and 13, 1942, at the Palmer House in Chicago. These meetings are open to physicians and others interested in industrial health. There is no registration fee.

The full program of this meeting is published in the December 6 issue of the *American Medical Association Journal*.

## MEDICAL SOCIETIES

### Davidson County:

November 18—"Unhappy School Days," by Dr. Thos. B. Zerfoss. Discussion by Dr. A. E. Keller and Dr. W. F. Orr, Jr.

December 2—"Dietary Deficiencies in Pediatrics," by Dr. Hearn Bradley. Discussion by Dr. T. Fort Bridges.

December 9—Election of officers.

December 16—"Extrapleural Pneumothorax (Report of Series of Forty Cases)," by Dr. F. H. Alley. Discussion by Dr. R. R. Crowe.

January 6—Annual dinner.

January 13—"Late Results in Treatment of Perforated Peptic Ulcer," by Dr. Carington Harrison.

### Hamilton County:

October 16—"Alcohol and Its Baneful Effects," by Dr. J. B. Swafford. "Fatigue," by Dr. F. E. Marsh.

October 23—"Treatment of Menorrhagia and Metrorrhagia," by Dr. John R. Martin.

October 30—"Recent Developments in Immunizations," by Dr. John W. Hocker. "The Present Status of the Treatment of Cancer," by Dr. S. S. Marchbanks.

November 6—"Tumors of the Breast," by Dr. Franklin Johnson. "Management of Reactions to the Arsenicals in the Treatment of Syphilis," by Dr. Clarence Shaw.

November 13—"Fungus Infection of the Feet," by Dr. R. L. Patterson. "When Is the Gall Bladder Surgical?" by Dr. H. D. Hickey.



November 20—"Pernicious Anemia—Motion Pictures," by Dr. Wm. P. Murphy.

December 4—Election of officers.

December 11—Memorial meeting.

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*Hardin, Lawrence, Lewis, Perry, and Wayne Counties:*

We had our last meeting of the year at Waynesboro last evening, Tuesday, November 25. Two papers were presented as follows: "Carcinoma of the Breast," by Dr. C. H. Heacock, Memphis; "Preclinical Diseases," by Dr. William C. Chaney, Memphis. We had a very good attendance and certainly had two of the best papers that have been presented for some time.

The following officers were elected for 1942: Dr. Leo Harris, President, Lawrenceburg; Dr. T. J. Stockard, Vice-President for Lawrence County, Lawrenceburg; Dr. L. D. Murphy, Vice-President for Perry County, Lobelville; Dr. W. E. Boyce, Vice-President for Lewis County, Flatwoods; Dr. Otis Whitlow, Vice-President for Hardin County, Savannah; Dr. D. L. Woods, Vice-President for Wayne County, Waynesboro; Dr. O. H. Williams, Hardin County, Savannah, Secretary-Treasurer. Dr. C. C. Stockard, Lawrenceburg, delegate; Dr. Leo Harris, Lawrenceburg, alternate delegate.

The next meeting will be at Waynesboro the last Tuesday in January, 1942.

O. H. WILLIAMS, M.D., *Secretary*.

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*Madison County:*

The Madison County Medical Society met in regular session December 2 at the New Southern Hotel at 6:30 o'clock for dinner.

Dr. Hunter Steadman, Henderson, was elected President; Dr. Hermon Hawkins, Jackson, First Vice-President; Dr. W. C. Ramer, Lexington, Second Vice-President; Dr. S. M. Herron, Jackson, re-elected Secretary-Treasurer.

*Program:*

"Conduct of Normal Labor and Routine Employment of Episiotomy and Prophylactic Low Forceps in Primipara," by Dr. Roderick Webb, Bemis.

"Influenza, Diagnosis, and Treatment," by Dr. Hunter Steadman, Henderson.

Both papers were especially interesting and were discussed at length by the members present.

S. M. HERRON, M.D., *Secretary*.

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*McMinn County:*

The McMinn County Medical Society held its regular meeting on November 13 at the Robert E. Lee Hotel in Athens.

Dr. Wm. S. Muse of Knoxville presented a paper on "Kidney Complications Following the Use of Sulfanilamide and Its Derivatives."

The society made and passed a motion to make resolutions and tribute to Dr. Luther Curtis Ogle, who lost his life in an automobile accident on November 9, 1941.

M. LOU HEFLEY, M.D., *Secretary*.

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*Robertson County:*

The Robertson County Medical Society met November 18 at the Robertson County Hospital. Those present were Drs. C. M. Banks, W. W. Porter, A. R. Kempf, R. L. Matthews, and J. S. Freeman, Springfield, and P. L. Pitt of Ashland City. Dinner was served by Mrs. McAdams.

The meeting was called to order by Doctor Banks, president, who sponsored the meeting for November. Letters were read from the American Congress of Obstetrics, calling attention to the postgraduate course at St. Louis, Missouri, from April 6 to 10, 1942.

The election of officers for the coming year was held. Dr. R. H. Elder, Cedar Hill, was elected President; Dr. A. R. Kempf, Springfield, Vice-President; and Dr. J. S. Freeman, Springfield, re-elected Secretary-Treasurer.

Dr. C. M. Banks was essayist. He gave a reminiscence of worth-while men who have gone before us.

There being no further business, the meeting adjourned.

JOHN S. FREEMAN, M.D.,  
*Secretary-Treasurer*.

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*Shelby County:*

November 18—Symposium: "Use and Abuse of Drugs," by Dr. L. D. Seager. "In Nose and Throat Disorders," by Dr. S. S.

Evans. "The Use and Abuse of Barbiturates," by Dr. W. T. Swink. "The Use and Abuse of Vaccines and Intravenous Medication," by Dr. W. C. Colbert. "Use and Abuse of Cathartics," by Dr. E. G. Campbell. General discussion.

December 2—Case reports: "Infection and Diabetes," by Dr. R. S. Pearce. "Fibrocystic Disease of the Lung," by Dr. D. G. Lockwood.

Papers: "Shock in Burns, Mechanism and Management," by Dr. Harwell Wilson. Discussion by Dr. J. L. McGehee and Dr. J. H. Francis. "Treatment of Burns," by Dr. W. M. Adams. Discussion by Dr. J. D. Cleveland and Dr. R. F. Mason.

#### *Sullivan-Johnson Counties:*

The regular meeting of the Sullivan-Johnson County Medical Society was held in Kingsport December 3.

An interesting case discussion was held and many members took part. Twenty-eight members and one guest were present.

The following officers were elected for 1942: Dr. W. A. Wiley, Kingsport, President; Dr. D. D. Vance, Bristol, Vice-President; Dr. R. O. Glenn, Mountain City, Vice-President; Dr. F. L. Alloway, Kingsport, Secretary-Treasurer.

D. D. VANCE, M.D., *Secretary*.

#### *Washington, Carter, and Unicoi Counties:*

The regular monthly meeting of the Washington, Carter, and Unicoi Counties Medical Society was held in the dining room of the Nurses Home at the Veterans Administration Facility, Mountain Home, November 13, at 7:00 P.M.

The society was guest of the medical personnel of the facility. The scientific program was preceded by a Dutch-type dinner.

Dr. R. D. Tompkins, clinical director of the facility, presided and introduced the guest speakers: Dr. John Williams, associate professor of medicine, Wake Forest College, Bowman Gray School of Medicine, Winston-Salem, North Carolina—subject, "The Diagnosis of Organic Heart Disease," and Dr. George Harrell, associate professor of medicine from the same school—subject, "The Diagnosis of Obscure Fevers."

Eighty members and guests were present.

Dr. Rutherford O. Ingham, Department of Public Health of Washington County, was elected to membership in the society.

The president announced the December meeting of the society would be held in Johnson City, Thursday, December 4, at 7:00 P.M., at which time there would be an election of officers for 1942.

The regular monthly meeting of the Washington, Carter, and Unicoi Counties Medical Society was held in the private dining room of the John Sevier Hotel at 7:00 P.M., Thursday, December 4, 1941. The scientific program was preceded by a Dutch-type dinner, which was enjoyed by forty-eight members and guests. Dr. Milton Smith Lewis of Nashville, Tennessee, addressed the society on the subject, "The Management of the Occipitoposterior Position with Report of 1,392 Collected Cases." Doctor Lewis was introduced by Dr. Ward Friberg, East Tennessee Vice-President of the Tennessee State Medical Association.

Following the scientific program an election of officers for 1942 was held and the following officers elected: Dr. E. L. Caudill, Elizabethton, President; Dr. Robert Bowman, Johnson City, Vice-President for Washington County; Dr. J. R. Moody, Erwin, Vice-President for Unicoi County; Dr. H. B. Cupp, Mountain Home, Secretary and Treasurer.

Dr. W. G. Frost, Elizabethton, and Dr. Walter Hankins, Johnson City, were elected to the Board of Censors. The other member of this board and chairman is Dr. H. L. Monroe of Erwin.

H. B. CUPP, M.D., *Secretary-Treasurer*.

### OTHER MEDICAL SOCIETIES

The Fifty-Seventh Session of the Mid-South Postgraduate Medical Assembly will be held in Memphis, Tennessee, February 10, 11, 12, and 13, 1942, at the Hotel Peabody.

A list of the guest speakers appears in the advertising section.



ABSTRACTS OF PAPERS PRESENTED AT VANDERBILT MEDICAL SOCIETY, NOVEMBER 7, 1941

1. Two case reports: "Neoplasm of Upper Small Intestine in Children," by Dr. Louis Rosenfeld.

The first case was that of a six-day-old male infant with persistent vomiting and a hard, freely movable mass in low midabdomen. At operation a fibroma of the mesentery of the jejunum, occluding the bowel was resected, continuity of bowel re-established with recovery. The patient is asymptomatic seven years later. Similar cases in the literature were discussed and their rarity pointed out.

The second case was that of a four and one-half-year-old white female with vomiting of two months' duration found by X-ray to have obstruction in the third portion of the duodenum. An annular lymphoid obstructing tumor was resected and a gastrojejunostomy performed with recovery.

There is no evidence of recurrence after twenty months. The literature was reviewed, and no similar tumor of the duodenum had been previously reported as cured.

These cases were discussed by Drs. Barney Brooks and Ralph M. Larsen.

2. "Virus Infection of the Mammalian Fetus," by Dr. E. W. Goodpasture.

The infrequency of infection of the human fetus from maternal disease is indicative of an effective barrier between the susceptible tissues of the embryo and the virus- or germ-bearing cells and fluids of the mother. In order to study the nature of this barrier, we grafted pieces of human amnion and chorion on the chorioallantois of chick embryo. They "took" readily and were inoculated with a variety of viruses. Whereas it was easy to infect the epithelium of amniotic grafts, that of the chorion was resistant. We concluded from these observations that the human chorionic epithelium is resistant to most human virus infections and forms a barrier between the mother and fetus.

This paper was discussed by Dr. W. S. Leathers.

## ABSTRACTS OF CURRENT LITERATURE

### ANESTHESIA

By HUGH BARR, M.D.  
Medical Arts Building, Nashville

Anesthesia for Surgery About Head. U. H. Eversole, M.D. The Journal of the American Medical Association, November 22, 1941.

The same rules apply to the selection of pre-operative preparation and medication for patients for operations about the head as apply to any other part of the body. Necessary precautions should be taken to protect the patient's eyes and to maintain an adequate airway at all times, consequently an endotracheal tube should be used.

The anesthetist should be on the alert for signs of disturbed respiration and circulatory depression. Short operations which are superficial may be done under pentothal or evipal. Prolonged operations, when a cautery is not used, cyclopropane alone, or in combination with ether or ethylene, is preferable. In long procedures, when a high frequency electrical apparatus or an actual cautery is used, ether vapor and air are safer.

The author describes an apparatus attached to the endotracheal tube with the ether vaporizer at the foot of the table operated by compressed air with an equally large and long exhaling tube with a respiratory indicator attached to it.

### OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.  
Suite 234 Doctors Building, Nashville

Plasma in Obstetrics. Leslie Hughs Tisdall, M.D., Brooklyn, New York. American Journal of Obstetrics and Gynecology, pp. 889-894, November, 1941.

"The efficacy of plasma in the treatment of hemorrhage and shock, whatever its nature, is now well known. Plasma is peculiarly adapted for obstetric needs. Obstetric hemorrhage and shock require immediate and adequate replacement of blood volume. Until recently, this meant transfusion of whole blood procured either from actual donors or from a blood bank. In the case of donors, actual time trials have shown that an average of at least two hours will elapse from the time donors are called until blood is available. Even if the donor is present in the hospital, necessary preparations require forty-five minutes before transfusion may be given. In the case of blood banks further time trials have shown that a minimum of thirty minutes is required before blood is available. Furthermore, blood banks are not unfailing sources of supply. Even the largest bank may find it impos-



sible to supply a call for one of the rarer blood types or be unable to furnish blood in the quantity needed. On the other hand, plasma is immediately available. There is no need for typing or cross-matching. Plasma may be pouring into the patient's veins one minute after the need becomes apparent." With this introduction, the author, convinced that plasma would play an important role in controlling maternal mortality hemorrhage factor, set up a simple, cheap, and practical method for the production and administration of plasma. The procedure for production and illustrative case reports are portrayed, reinforcing every statement in the conclusion that:

Plasma is an important addition to our obstetric armamentarium.

Plasma may be easily and cheaply obtained.

*Because of its easy production and low cost, no hospital should be willing to accept obstetric patients unless plasma is available.*

## OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.  
Doctors Building, Nashville

**Lime Burns of the Eye. The Use of Rabbit Peritoneum to Prevent Severe Delayed Effects.** Albert L. Brown, M.D. Transactions of American Academy of Ophthalmology and Otolaryngology, September-October, 1941.

Severe delayed effects of burns of the eye produced by certain chemicals are frequently unexpected because the initial injury seems to be rather slight. Conservative treatment, including the instillation of atropine, bland ointment, and the protection of a bandage in such cases, often ends in severe late effects, such as a large corneal scar, symblepharon, or any degree of corneal erosion to perforation and loss of the globe. It was found that physiochemical change occurs in the palpebral conjunctiva, which acts as a constant irritant to the globe and is responsible to a great degree for the severe delayed effects. Rabbit peritoneum, an easily obtainable tissue, was found to offer the best protection when interposed between the lids and the eyeball.

## PEDIATRICS

By JOHN M. LEE, M.D.  
Doctors Building, Nashville

**The Prognosis of Acute Hemorrhagic Nephritis in Childhood.** George E. Pittinos, M.D., and Others, Staten Island, New York. The Journal of the American Medical Association, 111: 1855 (November), 1941.

Of 110 children between the ages of three and one-half and fifteen and one-half years who had acute hemorrhagic nephritis in the New York Post-

graduate Hospital, four died. The authors followed up thirty-two of the survivors from one to ten and one-half years after the attack with the procedures they regard as the minimum for accurate determination of the status of such cases. Their procedure included routine physical examination, blood pressure, and urinalysis every three months up to and including two years after the acute attack, and an Addis count done at this time. If, during the course of these two years, there is the slightest urinary abnormality, the case should be followed at intervals with Addis counts and urinary function tests as indicated.

All the thirty-two children were physically normal except one who had elevated blood pressure. Six showed albuminuria; two of these had pyuria; two were normal eight and ten months later; one of these refused to return for further study.

None of the patients had anemia ascribable to the nephritis, none showed retention of nitrogen in the blood, and all had a negative urea clearance test. With the exception of two having pyuria, all patients showed normal Addis counts.

From this study the authors conclude that, while their experience would offer a good prognosis to hemorrhagic nephritis, they feel that in general the outcome from the disease is unpredictable for any one case or group of cases. In this group they felt that only one patient is in a latent stage of the disease and none is in the terminal stage.

## ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.  
Medical Arts Building, Chattanooga

**Roentgenographic Evidence in the Chest of Injury to Abdominal Viscera.** William Snow. American Journal of Roentgenological and Radiological Therapy, Vol. 45, No. 2, p. 227, February, 1941.

The author reports that for several years he has observed horizontal bands of increased density at the bases of the lungs in patients who had received a severe blow to the abdomen. This sign only occurs where the force applied to the abdomen was very great. Until recently, all the cases in which this finding occurred died and autopsy revealed rupture of the lung, spleen, kidneys, or other abdominal viscera. At autopsy no gross abnormality of the lungs, and the conclusion was reached that the horizontal bands of increased density were due to areas of atelectasis caused by the blow to the abdomen.

Recently the author observed a case showing these bands of increased density which recovered. The presence of blood in the urine and other signs indicated an injury to the right kidney. Following the recovery of the patient, the bands of increased density at the bases of the lung seen on the X-ray films of the chest disappeared.

## SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.  
188 South Bellvue, Memphis

**Common Errors in the Diagnosis of Hypothyroidism.**  
George Crile, Jr., M.D. *Surgery Clinics of North America*, 21: 1223 (October), 1941.

Symptoms of hypothyroidism may be attributed to chronic nervous exhaustion or neurocirculatory asthenia or conversely symptoms of these latter conditions may be attributed falsely to hyperthyroidism. Hyperactivity of the thyroid gland shows a consistent elevation above normal in the metabolic rate. In a few instances this rate may be from nothing to fifteen per cent, but in these cases the metabolic rate was probably below zero prior to the hyperthyroidism. Increase in appetite and loss of weight are the usual findings. Due to increase in oxygen requirement there is an acceleration of the circulation resulting in increased pulse rate and pulse pressure. There is dilation of the arterioles which lowers the diastolic pressure and produces a warm, flushed skin. Increased precordial thrust and palpitation are nearly constant findings. Proper, careful examination usually reveals enlargement of the thyroid gland unless the goiter is intrathoracic.

Hyperthyroidism in a young adult is easily recognized. The diagnosis is not so easy in older patients, particularly if complicated by diabetes, tuberculosis, organic heart disease, or chronic infections. "The most difficult condition to distinguish from hyperthyroidism is severe, essential hypertension, particularly when the latter condition has entered the malignant phase." An elevated metabolic rate is most uncommon in cases of essential hypertension, and it is at times almost impossible to make a differential diagnosis. A high or normal blood cholesterol in such cases is strong evidence against hyperthyroidism, but the clinical picture of the patient is the most reliable in making the diagnosis. In cardiac decompensation associated with an elevated metabolism, the test should be repeated after compensation has been reestablished.

Neurocirculatory asthenia is a functional disturbance occurring in a neurotic type; the symptoms are paroxysmal and disappear with rest in bed. There is no increase in pulse pressure, the hands are cold and moist and the appetite is diminished or normal with no weight loss. Major organic psychoses may resemble hyperthyroidism. Even if hyperthyroidism is the cause of the psychosis, conservative measures should be adopted until accurate metabolic determinations and careful examination can be done.

In questionable cases the therapeutic test with iodine is advocated. The patient is hospitalized for three days with a metabolic test each day. Then Lugol's solution fifteen minims three times daily is given for two weeks and three days' hospitalization with three successive metabolic determinations are

repeated. Observations of these rates, together with the pulse rate and weight, will often establish or refute the diagnosis of hyperthyroidism.

## UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.  
By G. A. WILLIAMSON, JR., M.D.  
307 Doctors Building, Knoxville

**Prostigmin as an Aid in Expulsion of Ureteral Calculi.**  
Vincent J. O'Connor. 1940 Yearbook of Urology, p. 239.

Prostigmin is a synthetic, white crystalline powder readily soluble in water and stable in sterile solutions. Clinically, it has been widely used for intestinal and bladder atony, especially postsurgical, as a vagotonic agent.

Hager recommended subcutaneous injection of one cubic centimeter of a 1:2,000 solution (0.5 milligram active substance) of prostigmin at three to four-hour intervals for four doses to stimulate passage of ureteral calculi. The author used this dosage in fifty-two patients. Seventeen received two to four series of injections. Selection for nonsurgical treatment was made with the usual recognition of the problem involved in each patient. No worthwhile conclusions as to the value of any expulsive aid, mechanical or pharmaceutical, can be drawn where the calculus was very small or ureter not grossly obstructed. Spontaneous expulsion can usually be expected in at least sixty per cent. Of these patients, thirty have been classified in this group, and, while passage of the calculus occurred shortly after the prostigmin injections in most instances, and this procedure seemed materially to hasten expulsion in twenty-three of them, the author could not feel that passage was entirely the direct result of prostigmin.

Where calculi of larger size had failed to descend over weeks or months when no manipulative treatment had been given and when calculus descended promptly after injections, it seemed self-evident this had assisted in a normal expulsive effort. This was the case in six patients, five of whom passed stones into the bladder, and one whose stone became arrested in ureteral orifice itself. In three of the former the size necessitated cystoscopic removal from bladder, and in the latter cystoscopic enlargement of orifice and direct removal.

In sixteen patients meatotomy, dilatation, and multiple catheters or bougies were used with injection of sterile olive oil, papaverine, etc., without dislodging or producing passage of stone. In the knowledge of a capacious lower ureter and in the absence of complications directing surgical intervention, prostigmin was given with resultant rapid downward progress or expulsion of the calculus in twelve of the sixteen. In nine the calculi passed within twenty-four hours after the injections. In two a second course after a three-day interval resulted in expulsion in eight and fourteen hours, respectively. One patient passed three large calculi after the third course, no cystoscopic treatment having been given for three months and cal-

culi having remained in the same position as determined by roentgenograms for eighteen months. Two patients passed multiple calculi after prostigmin, when both manipulative and surgical attempts had been previously unsuccessful. During the twenty-three months of this survey, thirteen patients were relieved of calculi by operation, and in one of the above-mentioned, operation was unsuccessful. There were seven other patients treated successfully without prostigmin injections. Thus, in summary of sixty-six patients treated, prostigmin was used as an additional aid in fifty-two, and in eighteen of these the clinical response was so direct and so obvious as to establish without reasonable doubt the virtue of this method.

Management of ureteral calculi is more or less an individualistic problem from the standpoint of both patient and urologist. The decision as to when to adopt expectant measures, when to practice cystoscopic manipulation, and when to remove surgically depends on the discretion of the operator and cooperation of the patient. Removal of the calculus is the objective, and any safe means which will facilitate this is worthy of trial. Prostigmin has been a distinct aid in the expulsion of calculi when surgical procedures were not critically indicated and where manipulative measures had been unsuccessful. It should always be a hospital procedure, preferably with the knowledge that lower ureter is not abnormally constricted.



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## 1941 MEMBERS OF TENNESSEE STATE MEDICAL ASSOCIATION

The following list of members of the Tennessee State Medical Association is published in accordance with a provision in the constitution of the Association.

The list of active members includes the names of those who were members on December 10, 1941.

The names of veteran members appear on a separate list following active members.

The arrangement of names is as follows:

The counties are arranged alphabetically. Towns

in each county are arranged alphabetically. Members in the towns are arranged alphabetically.

Names of members residing outside the state are arranged alphabetically on the last page of this section.

A list of the members who have died during the year 1941 is published on the last page of this section.

If any errors are found kindly report them to the JOURNAL, 508 Doctors Building, Nashville.

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<b>MAISON COUNTY</b> <b>Lafayette</b> J. Y. Freeman D. D. Howser A. Y. Kirby	<b>McMINN COUNTY</b> <b>Athens</b> W. R. Arrants R. A. Brock R. W. Epperson C. O. Force Edwin Force J. R. Nankivell A. W. Reeser L. A. Shields	<b>OVERTON COUNTY</b> <b>Livingston</b> W. M. Breeding W. M. Brown J. D. Capps John T. Mason H. B. Nevans A. B. Qualls	<b>PERRY COUNTY</b> <b>Clifton</b> James T. Keeton	<b>Flatwoods</b> W. E. Boyce	<b>Linden</b> O. A. Kirk	<b>Lobelville</b> L. D. Murphy	<b>PICKETT COUNTY</b> <b>Byrdstown</b> Floyd B. Hay (Mbr. Overton Co.)	<b>POLK COUNTY</b> <b>Copperhill</b> W. Y. Gilliam Thomas J. Hicks H. P. Hyde C. W. Strauss	<b>Ducktown</b> A. J. Guinn H. H. Hyatt (Mbr. Hamilton Co.)	<b>Isabell</b> F. O. Geisler	<b>PUTNAM COUNTY</b> <b>Algood</b> J. T. Moore	<b>Cookeville</b> Lex Dyer W. A. Howard Thurman Shipley Z. L. Shipley J. Fred Terry R. L. Witherington	<b>Granville</b> L. M. Freeman	<b>Monterey</b> T. M. Crain	<b>Isabell</b> F. O. Geisler	<b>Norma</b> D. T. Chambers	<b>Oncida</b> M. E. Thompson Milford Thompson	<b>Robbins</b> Pitney Phillips	<b>SEVIER COUNTY</b> <b>Sevierville</b> Robt. F. Thomas	<b>SHELBY COUNTY</b> <b>Brunswick</b> C. C. Chaffee	<b>Coltierre</b> L. P. Pearce																																																				
<b>MADISON COUNTY</b> <b>Bemis</b> Kelly Smythe Roderick C. Webb	<b>Gadsden</b> F. C. James	<b>Jackson</b> J. G. Anderson Everett Archer B. C. Arnold Glen Batten G. H. Berryhill G. W. Brasher Cecil H. Brown R. S. Brown Swan Burrus Tate B. Collins J. L. Crook J. E. Douglass W. B. Eason L. D. Farragut W. T. Fitts B. L. Green S. M. Herron G. Frank Jones Horace L. Jones J. W. McClaran S. T. Parker J. C. Pearce J. E. Powers Alvin B. Rosenbloom W. G. Saunders Chas. F. Webb R. B. White	<b>McNairy County</b> <b>Selmer</b> T. N. Humphrey H. C. Sanders E. M. Smith John R. Smith	<b>Stantonville</b> E. G. Sanders	<b>MONROE COUNTY</b> <b>Madisonville</b> R. C. Kimbrough	<b>Sweetwater</b> L. L. Barnes W. J. Cameron J. A. Hardin R. M. Price T. M. Roberts	<b>Tellico Plains</b> W. A. Rogers	<b>Vonore</b> J. A. McCollum	<b>MONTGOMERY COUNTY</b> <b>Clarksville</b> H. H. Edmonson V. H. Griffin I. E. Hunt J. B. La Hiff J. H. Ledbetter R. B. Macon E. B. Ross Jack Ross John W. Ross M. L. Shelby Paul E. 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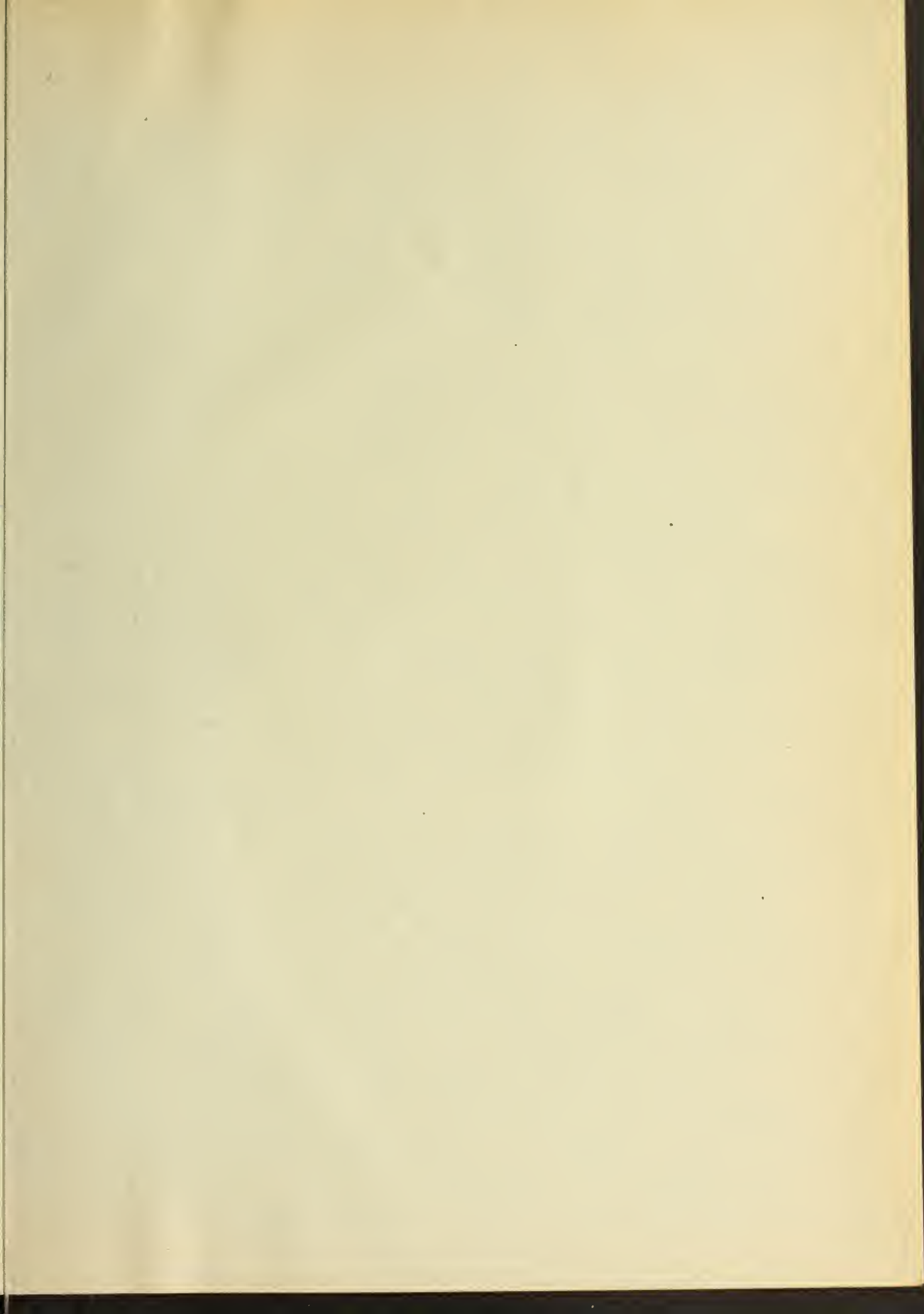
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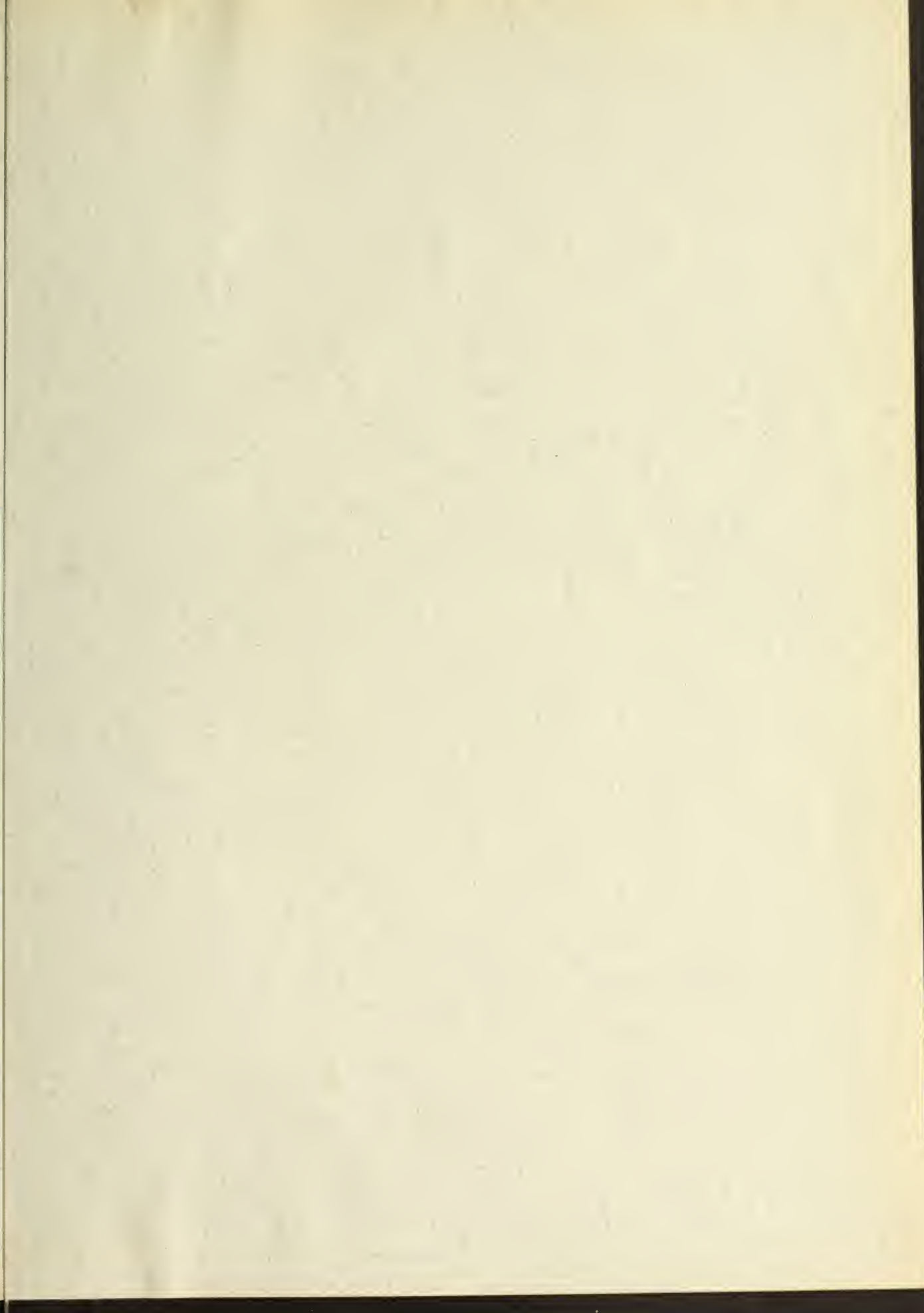


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